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ON
AFFECTIONS OF THE HEART
AND
IN ITS NEIGHBOURHOOD.



ON
AFFECTIONS OF THE HEART
AND
IN ITS NEIGHBOURHOOD.

CASES, APHORISMS AND COMMENTARIES.

(ILLUSTRATED.)

BY
HORACE DOBELL, M.D.,
SENIOR PHYSICIAN TO THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST,
ETC., ETC.

LONDON:
H. K. LEWIS, 136, GOWER STREET.
1872.

TO

GEORGE BURROWS, M.D., B.A., F.R.S.,

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS ;
PHYSICIAN EXTRAORDINARY TO THE QUEEN ;
MEMBER OF THE SENATE OF THE UNIVERSITY OF LONDON ;
CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL ;
LATE PRESIDENT OF THE GENERAL MEDICAL COUNCIL OF EDUCATION,
THE ROYAL MEDICAL CHIRURGICAL SOCIETY,
THE BRITISH MEDICAL ASSOCIATION,
ETC., ETC.

DEAR DR. BURROWS,

It was in your wards at "Old St. Bart.'s" that I first saw AFFECTIONS OF THE HEART AND IN ITS NEIGHBOURHOOD diagnosed, explained and treated with that striking practical ability which excited the admiration of your pupils.

Twenty-five years have passed since those youthful days of unlimited ambition, when you cheered us on in our hard work by your bright and untiring example ; and I hope that, in reading the following SIMPLE CLINICAL RECORDS, you will forget to consider whether or not your good teaching was thrown away, and will only see, IN MY DEDICATING THIS BOOK TO YOU, a proof that the affectionate remembrance of a considerate and admired teacher has not been obliterated in that "Darwinian struggle for existence" so long and necessarily associated with the scientific work of

Your Sincere Friend

And Former Pupil,

HORACE DOBELL, M.D.

LONDON, *April*, 1872.

P R E F A C E.

IN the following pages, not only has no attempt been made at abstruseness, but it has been particularly avoided. I hope I am right in believing that this will make the work more acceptable to the medical practitioner.

The Royal Hospital for Diseases of the Chest is resorted to by patients suffering from all forms of affections of the heart; and most of my cases have been selected from that source; but I have also made use of my notes of private practice when they better illustrated the subject under consideration.

I have purposely avoided stating when a case occurred in private and when in hospital practice, and I have in all cases withheld names and such other points as might lead to identification of the patients, if by chance these pages should be read by their friends.

My chief difficulty has been, in looking through a large mass of cases accumulated during twenty-five years, to decide which to select for publication.

I have aimed at choosing those in which a few important

points were strongly marked and clearly recorded, rather than such as presented a number of complicated details.

The cases will thus form illustrations of special points of practical interest.

The Sphygmograph was employed in several of the cases included in this part of my work; in some of them with the advantage of the valuable assistance of Dr. Anstie, who has attained so much skill in its application. But I have excluded sphygmographic tracings from this set of cases for the following reasons:—1. Because some of the cases were taken before the improvements in the sphygmograph had made it a reliable instrument; and some when it was not practicable to apply it; and therefore no complete comparison could be made of its indications. 2. Where the results of sphygmographic examination were of sufficient importance to require special notice, I have thought it best to reserve the cases for a future volume of this work, in which they may form part of a series to illustrate definite conclusions.

It will be gleaned from the preceding remarks that I wish this work to be considered as only an instalment of a more extensive collection of cases, aphorisms, and commentaries, illustrative of affections of the heart, which, at some future day, I may find time to collate and publish.

84, HARLEY STREET,
March, 1872.

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III. The Heart-Bed.
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N.B.—Since the Plate of the Heart-bed went to press, the arrangement of the legs and ratchets and the accommodating movements of the crutches have been perfected.

PLATE I.

THE NERVES AND FASCIA OF THE HUMAN HEART.

(*See Page 12.*)

PLATE 1, represents the Aorta and the anterior surface of a human heart which was hypertrophied, and weighed four pounds. The trunk and some of the branches of the coronary artery were ossified. The pulmonary artery has been cut away close to the right ventricle. A portion of the wall of the right ventricle has been removed to expose the cavity and the septum between the ventricles. The serous membrane has been reflected off from the cardiac fascia, a small portion only of which has been left covering the ventricle. (Reduced and copied by the Heliotype process from the original plate; by the kind permission of Dr. Robert Lee, F.R.S.)

- a.* The arch of the Aorta.
- b.* The origin of the pulmonary artery, which has been completely removed.
- c.* The anterior surface of the left ventricle.
- d.* The anterior surface of the right ventricle.
- e.* The great ganglionic plexus of nerves, into which branches from the par-vagus, recurrent, and sympathetic nerves of both sides enter, and from which the principal cardiac nerves take their origin.
- f.* The par-vagus of the left side.
- g.* The trunk of the left coronary artery, ossified and completely surrounded with ganglia and nerves, which are distributed over the whole surface of the ventricle to the apex.
- h.* The serous membrane reflected off from the cardiac fascia, a small portion only of which is left covering the ganglia and nerves near the apex.
- i.* The cardiac fascia.

PLATE II.
CLUBBING OF THE FINGER-ENDS IN CHRONIC HEART
DISEASE.

(See Page 17.)

Fig. 1.—Excessive Clubbing of the fingers, without incurvation of the nails. Mitral and aortic disease; vestiges of rheumatic fever three and a-half years ago. (See p. 18.)

Fig. 2.—Excessive Clubbing of the fingers, without incurvation of the nails. Congenital malformation of the heart. (See p. 19.)

Fig. 3.—Clubbing of the fingers, with immense enlargement of the heart, in a child. The chest-walls moulded over the heart during the progress of development and growth. Primary obstructive disease of the aortic valves. Secondary incompetency of the mitral and tricuspid valves. (See p. 19.)

NOTE.—The photograph has failed to exhibit the ends of the fingers, but has fairly represented the prominence of the cardiac region.



Fig. 1.



Fig. 2.



Fig. 3.

Plate III.

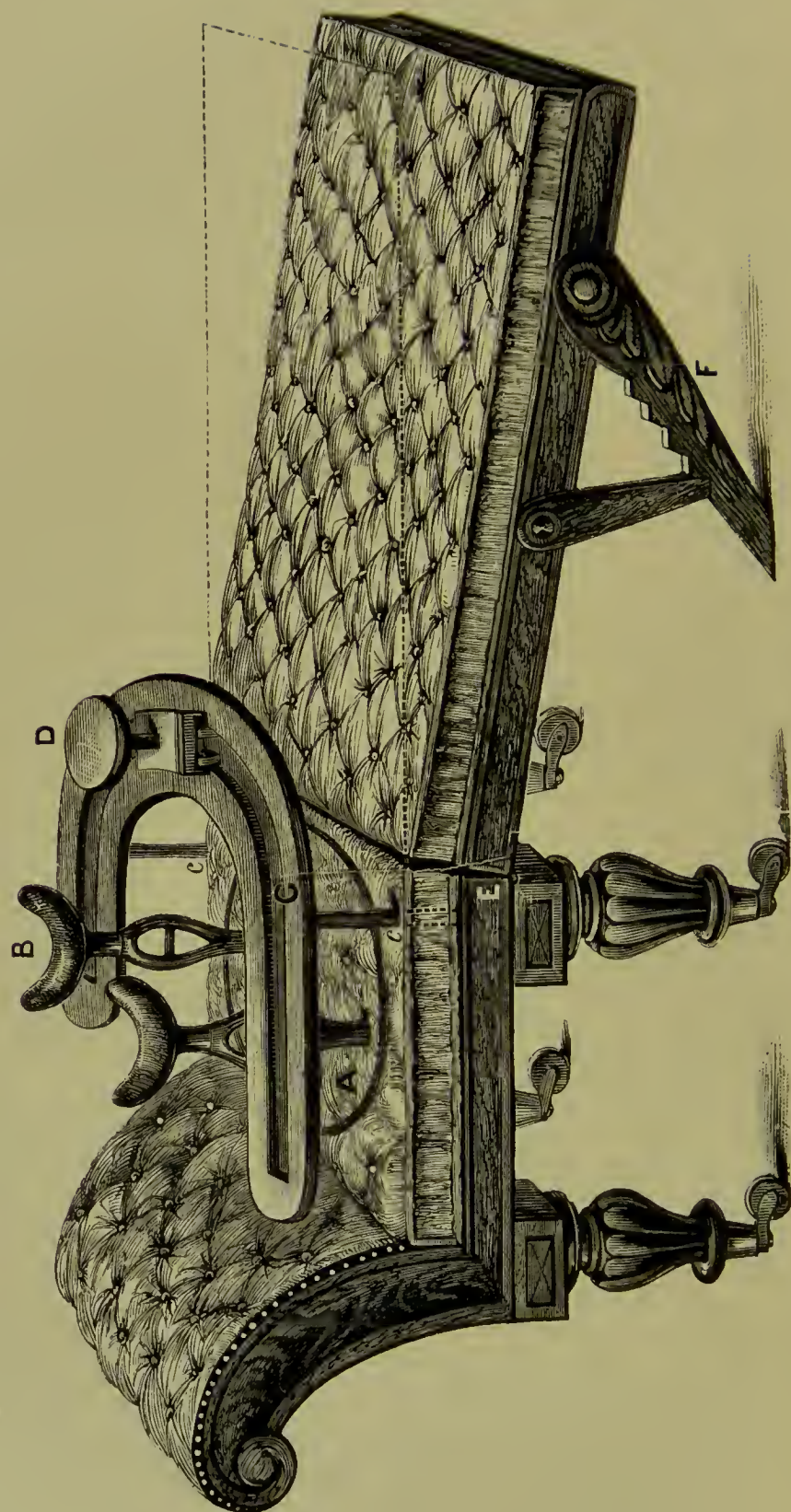


PLATE III.

DESCRIPTION OF THE HEART-BED.

(See Page 15.)

A. Revolving Seat to enable the patient to turn round in any direction, with ease. By removing the centre of the circular cushion, a night-commode can be applied underneath the bed.

B. Crutches, with hand-rails. When tired of leaning forward the patient can support himself on the crutches under the arm-pits, or by resting on the hand-rails. The crutches have telescope and buffer springs to accommodate them to the required height with comfort. They can be withdrawn from their sockets and removed when not required.

C. Semi-circular Table, so placed that the patient can lean forward and rest his arms upon it, either in front or at the sides, shifting his position at pleasure, by turning round his revolving seat (A). The table can be removed by withdrawing the rods (*c, c*) from their sockets, and the patient can then turn his legs quite over the side of the bed, and sit with them down; after which the table can be replaced if required. It is sufficiently wide to allow a tray to be placed upon it for meals, a desk for writing, and the like.

D. A Travelling Table upon which to place a cushion for the support of the head. This little table runs upon wheels in the sunken tramway upon the semi-circular table (C), and its top moves upon a large ball and socket, thus enabling the patient to shift his position round the table, and turn his head from side to side without removing it from the cushion. Sitting on the revolving seat, with his arms resting on the semi-circular table, and his head on the travelling cushion, he can turn about as restlessness may dictate with the greatest ease without disturbance of his general position.

E. Hinges to allow the bed to be inclined from the patient's hips downwards, so as to accommodate the position of the extremities to the forward bend of the body, and prevent compression of the abdominal organs and inguinal vessels, and forcing up the diaphragm. The hinge is so arranged that the lower portion of the bed can be disjoined at pleasure, leaving the upper portion in the form of an easy chair.

F. Legs and Ratchets, by which the movable part of the bed can be let down or raised to the horizontal position indicated by the dotted line.

NOTE.—In whatever position, and with or without the table, bedclothes can be used as with an ordinary bed. When the patient is well enough to lie back, the crutches and table can be removed and pillows placed behind.

PRELIMINARY REMARKS.

WITH regard to the sounds of the heart, the following description of a complete rhythmical action gives the principal details which have guided me in my clinical observations, and may be referred to by the busy practitioner to refresh his memory while reading over a case.

Description of a complete rhythmical action of the heart, with its sounds and pauses :—

- (a) The blood having been flowing into the ventricles during the long pause, and the auricles having been distending, they suddenly and quickly contract, and thus complete the distension of the ventricles. Immediately this takes place:—
1. *First sound and impulse.*—The ventricles contract throughout, their walls drawing up towards the great arteries; simultaneously the fleshy columns contract and close the auriculo-ventricular valves. The arterial valves are forced open by the onward course of the blood, and the auricles are refilling during the ventricular contraction.
 2. *Short pause.*—Auricles continue to fill; large arteries distend preparatory to elastic recoil.
 3. *Second sound.*—The elastic walls of large arteries recoil and arterial valves close; auricles continue to fill; ventricles dilate; auriculo-ventricular valves open,

and blood begins to flow from auricles into ventricles.

4. *Long pause*.—Arterial valves continue closed; torrent of blood flows on into the capillaries; ventricles continue to dilate and to fill with blood, auricles are becoming distended.

(a a) At the end of this pause the conditions (a) are repeated.

. If there is obstruction at the auriculo-ventricular valves, the much discussed pre-systolic bruit will occur at this juncture; viz.: when the auricular contraction culminates.

The manner of the heart's action, the manner of its disorder, and the mode of production of affections of its vascular walls, have been so well summarised by Dr. J. Milner Fothergill in his Hastings' Prize Essay, 1870, that I shall quote his words:—

“*The Heart's Mode of Action*.—The heart, as has been shown by Pettigrew, consists of several folds of organic fibre-tubing folded on each other; it is thus capable of distension and rhythmical contraction. For this purpose, a singular system of innervation, motor and co-ordinating, is provided. The real motor power of the heart is under the control of minute ganglia, each with a morsel of muscular fibre under its direction, which are alone capable of carrying on the action of the heart, but only in a tumultuous manner, as seen after section of the vagi. As with all other accumulations of organic fibre, the distension by contents leads at length to contraction in a more or less rhythmical manner. The vagus exercises over this a co-ordinating (von Bezold), or even an inhibitory

action ; *i.e.*, the application of a stimulus, as electricity for instance, to the vagus, retards the cardiac contractions, and, if the stimulus be powerful enough, arrests the heart's action in diastole. The vagus then normally acts against the first impressions of distension, and only permits contraction when the distension is sufficient to produce uniform contraction, which then goes on in a truly peristaltic manner, but so swiftly as to be easily mistaken for a simultaneous general contraction. Thus, to some extent, distension and the action of the vagus balance each other ; any disturbance of that balance, then, would produce irregularity, no matter in what direction the disturbance might lie. There lies, too, in organic muscular fibre, an inherent power of growth to meet demand ; thus, if increased strain be thrown upon the heart, increased growth of muscular tissue, in health, takes place, and again the balance is restored between the blood to be driven and the power to drive it. When, however, from any cause, there is a deficiency in the compensatory nutrition, a species of balance is again struck, but of a lower form, by distension of the fibres, or, in other words, dilatation. In fact, there is planted in this comparatively simple cardiac innervation, a more complex one of contraction and reduction of the ventricular cavity on the one hand, and a species of normal distension on the other. These actions are regulated by nerves which have been dissected out in the rabbit, and experimented on by MM. Cyon, Claude Bernard, and others. The one which calls into action an increased action against obstruction is called the *accelerator nerve* ; and the other, which admits a normal distension of the walls, is called the *depressor nerve* of the heart. Claude Bernard has even gone so far as to state it as his opinion that, through the action of the latter, a species of distension may so take place in accommodation to existing circumstances as to convert the cardiac

chambers into temporary blood-reservoirs. This their construction as organic fibre would permit; for organic fibre permits great distension without abolition of function. Thus, while carrying on the circulation by expelling a quantity only of the contained blood off the top of the ventricle, and permitting a large portion to remain on each systole, this accommodation is allowed without bad results. This is undoubtedly no rare occurrence, if clinical observation were exact enough. Thus, between the ordinary balancing powers of the obstacle of the blood to be driven, and the muscular power to drive it, of the stimulating effects of distension in producing contraction, and the controlling action of the vagus, the heart's action ordinarily rocks; but, in addition to that, there is a more complex system of accommodating distension on the one hand, and an accelerating contracting action against an obstacle on the other, which exercise a regulating power according to special circumstances. Ordinarily, however, the action lies between the first set of nerves, with the driving power, and the work to be done. With their disturbances of balance we are now more especially engaged.

“*Distension*.—The first action of disturbance of this balance is engorgement or distension. When much blood has been located in the ventricles, and they are not capable of completely emptying themselves, a portion remains at each systole. At each diastole, however, an equal quantity of blood is again thrown into the ventricle, and thus at the next systole a larger quantity remains unexpelled; and this process goes on until death, or until some compensatory relief is attained. This relief is usually attained by congestion of the veins, and the system suffering. This distension or, if chronic, dilatation is produced in many ways, thus:—1. Pouring in of the blood under increased pressure, as in the

enlargement of the left ventricle, which follows in time on mitral regurgitation, and increased action of the right ventricle and thickened pulmonary vessels; 2. Muscular failure from defective nutrition, as in fevers, in coronary atheroma, or pericardial adhesion; 3. Obstruction to the flow of blood forwards, as in deposit of fibrine on the semilunar valves, diseased vessels, etc.; 4. Disorder of innervation, as a disturbance of the balance between the sympathetic ganglia and the action of the vagus; 5. Excessive exertion and consequent cardiac exhaustion; 6. Valvular insufficiency. This condition may pass on to permanent dilatation.

“*Mode of Repair.*—The ordinary modes of repair of this condition are two: first, relief of the condition on which it depends, where practicable; and, second, hypertrophy, when it is due to increased difficulty in the flow forwards, or to valvular insufficiency, by that power of self-increase which is allowed to all muscular fibre, but with which organic muscular fibre is endowed *par excellence*. Restoration of the balance may take place in three modes, of higher and lower grades: 1. The highest, restoration of the cavity to normal size; 2. Hypertrophy, by increase in number of fibres (Forster) and thickening of existing fibres (Bamberger and Rokitsky)—a compromise; 3. Dilatation, a permanent distension—the lowest restoration of balance, and entailing diminished vital capacity to a point proportioned to the heart’s lowered power.

“The signs of this disturbance of balance, or partial asthenia, are three: palpitation, irregularity, intermittency.

“1. *Palpitation.*—The first evidence of failure of power is palpitation. It is undistinguishable from increased action, except in deficiency of results. When there is excited action, as in exertion or excitement, it is perceptible in the bounding pulse, or, with the sphygmograph, in the increased

apex-beat. Palpitation is not so accompanied; and though to auscultation and percussion the heart-stroke may appear identical, it is in the results the real difference lies. Palpitation is a laborious heart-stroke, but not a stronger one. It is the evidence of effort, not of capacity. It is barren in result—a laborious stroke in place of a normal one, but not of more effect, not always of so much. It is intimately associated and commonly mixed up with the next form—irregularity. Palpitation may be engrafted on symptoms of chronic insufficiency as a temporary condition; as, for instance, in the palpitation of Bright's disease, or of slight exertion in a dilated heart from valvular insufficiency. Palpitation is a violent effort of the heart-walls to overcome the action of the vagus, *plus* the obstructed flow.

“2. *Irregularity*.—Irregularity of the bulk of blood transmitted into the arteries is one thing, and is due to auriculo-ventricular incompetence. Irregularity in time is another. The latter is under consideration here. Irregularity of rhythm is not due to disordered innervation, but to obvious debility. It is an arrest in the commencement of the peristaltic contraction or heart-stroke. The controlling action of the vagus arrests the contraction until such time as the layers of fibres acting early on the systole ought normally to have acted; and then a sharp, almost simultaneous contraction takes place, with an increased thud against the chest-walls. This action is homologous with the increased action of the muscular fibres, under the control of the cardiac ganglia, when the systole has been retarded by stimulation of the vagus. Sometimes it appears as if the action of these layers, acting early in the systole, had been lost; and there is a perceptible change of action in the heart, as if the contraction were commencing from a new layer or set of fibres. Richardson has compared this to a change in order of a number of

strikers on an anvil. It always reminds the writer of a horse changing its feet when cantering. This is a more serious evidence of over-taxation of the heart, and is often found mixed up with palpitation. It is often the result of over-exertion, and affords strong suspicion of ventricular distension. Chronic irregularity may have engrafted upon it a passing palpitation from an intercurrent additional disturbance of balance. Nervous irregularity and palpitation will be considered in a future section.

“3. *Intermittency*.—This is sometimes purely nervous, and is inexplicable. When persistent, it is usually associated with an impaired first sound, defective apex-beat, and other signs of degeneration. The occurrence of palpitation during this condition sometimes clouds the diagnosis, and makes it very difficult. Intermittency of ventricular contraction is not identical with intermittency of radial pulse, though related to it. In some cases of intermittency of the radial pulse, if the stethoscope be applied while the pulse is held, a ventricular contraction will be distinguished when there is no evidence in the pulse; but it is a feeble contraction. In other cases, the ventricle does not perceptibly contract. Whether there is a very abortive contraction, or not, is doubtful. Certain it is, that in some cases the ventricular contraction can be detected when too feeble to produce a pulse-wave; in other cases, no ventricular contraction can be perceived. Intimately connected with this condition, is true angina pectoris, and, finally, cessation in diastole.”

The distribution of nerves to the heart, and its nervous connections with other organs and parts (see Plate I.), require to be kept constantly in mind to assist us in understanding the

symptoms and complications of affections of the heart, and its wide sympathy with other organs.

The discoveries of Remak, and the patient and wonderful dissections of Dr. Robert Lee showing the abundant distribution of nerves and ganglia in the substance of the heart itself, and the existence of a cardiac fascia, are of the highest importance. Describing these discoveries to the Royal Society (Transactions 1851), Dr. Lee says :—"The following conclusions may be deduced:—

"I. That the blood-vessels and the muscular structure of the auricles and ventricles of the heart are endowed with numerous ganglia and plexuses of nerves, which have not hitherto been described or represented in the works of other anatomists.

"II. That the nervous structures of the heart, which are distributed over its surface to the apex, and throughout its walls to the lining membrane and columnæ carneæ, enlarge with the natural growth of the heart before birth, during childhood and youth, until the heart has attained its full size in the adult.

"III. That the ganglia and nerves of the heart enlarge, like those of the gravid uterus, when the walls of the ventricles are affected with hypertrophy.

"IV. That the ganglia and nerves which supply the left ventricle in the natural state, are more than double the size of the ganglia and nerves, distributed to the right side of the heart.

"This anatomical demonstration of the ganglia and nerves of the muscular substance of the heart, completely overthrows the last remaining argument employed by those physiologists who still defend the doctrine, that the irritability and contractility of muscular fibre are independent of

nervous influence. This demonstration of *the existence of numerous ganglia on the surface and throughout the walls of the heart*, further clearly indicates the source of the actions of the heart as an entire organ, and how its detached parts can continue to contract after its total separation from the body. It likewise furnishes a satisfactory explanation of many phenomena observed in the progress of organic diseases of the heart.

“ In prosecuting this investigation into the nervous system of the heart, I found that the great difficulty of dissecting and displaying the cardiac ganglia and nerves, did not arise so much from their softness, from their close and intimate connexion with the blood-vessels, or from the quantity of adipose matter in which they were embedded, as from the presence of a dense fibrous membrane, or fasciæ, which was interposed between the serous membrane and the muscular coat, *of whose existence as a distinct tissue of the heart I had no knowledge when these researches commenced.* In the works of the most recent systematic writers on anatomy, the heart was represented as consisting of muscular and tendinous structures, blood-vessels, nerves, and absorbents, enclosed between two serous membranes.

“ On examining this fibrous membrane, after the removal of the serous covering, it is found to be possessed of great strength and firmness, glistening, semi-transparent, and resembling in all respects the aponeurotic expansions, or fasciæ covering muscular organs in other parts of the body. It is much stronger over the ventricles than the auricles, so that its separation often cannot be effected without tearing up some of the muscular fibres to which it is attached.

“ From the inner surface of this fasciæ, which I have named the *Cardiac Fascia*, innumerable strong fibres pass to the blood-vessels, nerves, muscular fasciculi, and adipose

matter. These strong, slender fibres, connected with or proceeding from the inner surface, accompany and surround all the blood-vessels and nerves, and they are interlaced together, so as to form a peculiar stroma—if it may be so termed—of considerable thickness, between the fascia and all the various structures beneath, which it invests and binds together in the strongest possible manner. These fibres form a complete sheath around all the arteries, veins, and nerves, on the surface of the heart, and accompany them as they dip down between the muscular fasciculi to which these branches are distributed throughout the entire walls of the heart, from the surface to the lining membrane. The cardiac fascia is obviously one of the principal causes of the firmness and strength of the central organ of the circulation of the blood, as it binds together into one mass, and gives support to the muscular fibres, like the fasciæ investing other muscles. The thin serous covering of the heart can possess little power, and add nothing to the strength of the parietes, and probably but for the fascia now described, the heart would often yield in all directions, especially at the apex.

“In a pathological point of view, the cardiac fascia is perhaps not less worthy of notice. Muscular structure, it is well known, is not liable to attacks either of common or specific inflammation. It is impossible to avoid suspecting that *rheumatic inflammation of the heart has for its principal seat this dense fibrous membrane*, lying between the serous and muscular coats of the heart, and that attacks of rheumatism of the heart do not commence primarily on the muscular structure. The tunica sclerotica of the eye sometimes becomes inflamed, softens, and yields; and from these changes, it is known that sclerotic staphyloma, and other discases, are the results. Whether in dilatation of the heart, a similar morbid change is not first set up in the fascia, and

what influence this fibrous membrane has in modifying all the diseases of the heart, future observations must determine.

“ After the removal of the serous membrane from the surface of the ventricles, there are plexuses of ganglionic nerves readily seen with the naked eye through the cardiac fascia, ramifying on the muscular substance of the heart. If these superficial nerves, situated immediately under the cardiac fascia, be traced backwards towards the base of the ventricles, they are found to terminate in a great ganglionic plexus, situated between the pulmonary artery and aorta, to the outer coat of which it adheres much more firmly than to the pulmonary artery. This is the nervous plexus between the aorta and pulmonary artery, described by Fallopius more than three hundred years ago. Into this great nervous mass, which enlarges as it passes to the base of the ventricles, branches of nerves enter from the recurrent and sympathetic nerves. From the par vagum, or recurrent, and great sympathetic, branches pass to the heart behind the aorta and pulmonary artery; but *the great ganglionic mass of nerves, situated between the aorta and pulmonary artery, is properly the root of all the cardiac nerves and ganglia.* From the right side of this ganglionic mass several broad, flat branches of nerves, invested with a soft neurilemma, and accompanied by small blood-vessels, proceed to the right auricle, right ventricle, and to the septum between the ventricles. From the left side of this nervous mass, under the arch of the aorta, several large flat nerves, likewise enveloped in a neurilemma, and accompanied by small blood-vessels, proceed to the left auricle, left ventricle, and the inter-ventricular septum. These large flat nerves pass to the root of the left coronary artery, which they not only completely surround like a sheath, but likewise cover a portion of the aorta, near its origin. Many large branches of nerves, with ganglia formed upon

them, accompany not only all the branches of the coronary arteries to the apex, but all the branches which pass into the muscular substance of the ventricle, and are distributed throughout its walls to the lining membrane and *columnæ carneæ*. From the deep nerves and ganglia of the ventricles the muscular structure is chiefly supplied. From the great mass of nerves situated around the roots of the coronary arteries and aorta, there are numerous branches of nerves with ganglia distributed over the muscular walls of the ventricles of the human heart, and which do not accompany the blood-vessels. On the portions of the ventricles which are devoid of fat these ganglia and nerves are distinctly visible to the naked eye, through the serous membrane and cardiac fascia, and present a very remarkable appearance. These superficial cardiac nerves are remarkably soft, flat, and somewhat transparent, as Scarpa has described, with a grey colour, and the smallest branches are enveloped in a soft sheath or neurilemma. Towards the left side and apex of the ventricle these nerves lie in grooves or depressions in the muscular substance, and they spread out into ganglionic enlargements, from which literally innumerable small filaments are sent off, which ramify on the muscular walls. Ganglia are formed of considerable size on these superficial nerves, where they are crossing the blood-vessels which sink deep into the substance of the heart. It can clearly be demonstrated that every artery distributed throughout the walls of the uterus and heart, and every muscular fasciculus of these organs, is supplied with nerves upon which ganglia are formed, and which are the sources of all their contractile powers." (See Plate I.)

It is important to remember the *venous connections of the heart*—the order and direction in which retrograde

congestion will occur when the onward torrent of the blood is obstructed. When the obstruction is in the systemic arterial system and left side of the heart, the congestion will, of course, fall first upon the pulmonary veins, and the ramifications of the pulmonary artery will at once be overcharged, and the circulation in the lungs impeded. The order of events will be as follows:—

- Obstruction of, 1, The pulmonary veins at the left auricle, and through them of the pulmonary capillaries and pulmonary artery, with disturbance of all the functions of the lungs.
2. The right ventricle.
3. The right auricle, and, through the cardiac veins and and *venæ Thebesii*, congestion of the substance of the heart.
4. The superior vena cava and azygos veins, and through them the bronchial veins and lungs. The innominate veins, the subclavian veins, and the upper extremities. The jugular veins, and the brain, neck, and head, and the spinal veins.
5. The inferior vena cava, and through this of the hepatic veins and liver. Portal vein, and stomach, spleen, pancreas, intestines. Renal veins and kidneys. Iliac veins, and the bladder, generative organs, and lower extremities.

I have placed the superior vena cava and subclavian before the inferior vena cava, because clinically I have found clubbing of the fingers (see Plate II.) from chronic congestion of the hands and upper extremities to precede swelling of the lower extremities, and also because I think there is reason to believe that certain varieties of pains in the arms accompanying heart disease are due to obstacles in the return of

blood through the subclavian veins ; and these pains precede swelling of the lower extremities. It must be remembered that, as the thoracic duct and right lymphatic duct open into the subclavian veins, obstruction of the entire lymphatic system occurs so soon as obstruction is felt by these veins.

In considering *the varieties of pain accompanying affections of the heart*, the neuralgic must always occupy the most prominent place on account of its agonising character. But careful observation leads me to think that a heavy oppressive heart-pain is produced quickly when the right auricle becomes over-distended with blood, and the orifices of the cardiac veins and venæ Thebesii are thus obstructed. This is a purely congestive pain of the substance of the heart.

I think that a heavy dull pain, as opposed to an acute neuralgic pain, is produced in the arms by obstruction of the return of blood, through the subclavians. This is a purely congestive pain of the extremities.

I think that the severe, dull, aching, heart-pain, as distinct from acute neuralgic pain, which occurs in anæmic and weak persons, independent of special heart disease, and also in persons with weak hearts, is a *myalgia* of the same character as the pain felt in the muscles of the legs, when ascending steep stairs, and in the muscles of the arm when held out at a right angle with the body beyond a certain time. The heart pain under these circumstances is simply the expression of fatigued and overtaxed muscle, and will indicate disease only if felt under such a combination of circumstances as ought not painfully to overtax a normal heart.

THE HEART-BED.

(PLATE III.)



THERE are few chronic eases of severe heart-disease, whether terminating in recovery or death, that do not pass through a stage in which the patient is unable to lie down, or even to lean back beyond the perpendicular line, without distress or danger; and there are many in which, at some period of their course, the only possibility of sleep is to lean forward on pillows placed upon a table in front of the patient.

Dropsy of the lower extremities is produced long before it need be, by the continued maintenance of the sitting posture with the legs down, or by keeping them up when the patient is obliged to lean forward, and thus to compress the veins and lymphatics in the groins by keeping the trunk flexed at an acute angle with the thighs.

These difficulties of position go on for days and weeks, and—what with the pains in the back, due to the strain upon the lumbar muscles; the sore arms and elbows, due to leaning upon them; the disfigured forehead and face, due to the inequalities and other inconveniences of the pillows upon which the head is rested; the dropsy of the legs due to the force of gravity, and to compression of the veins and lymphatics at the groins; the dropsy of the hands, due to the constrained flexure of the elbows; the dropsy of the integuments of the abdomen, due to the constrictive bending forward at the waist; the interference with the action of the stomach and bowels, due to the postural compression of the digestive organs; the cramping of the diaphragm, and the hampering of the

already obstructed heart, by the pressure of the abdominal organs upwards; and in addition to all these, the difficulty of finding any support for the head and elbows in front, that will not continually slip away, when the weight of the body is thrown upon it, and thus disturb the only possible opportunities of sleep;—these circumstances accumulated around a patient already suffering from a most distressing disease, combine to constitute a state of martyrdom of the most agonising and wearing description.

In attending such cases, whether in hospital or private practice, I have so often endeavoured, in vain, to find any couch, bed, or chair that would at all meet the necessities of the case; and I have been so often distressed by the urgent appeals of patients and their friends for something which might give the poor sufferer a little more comfort, and a passing chance of sleep; that I have at length contrived a *heart-bed*, which does to a very great extent meet all the necessities of the case (see Plate III.); and I trust it may prove an unspeakable boon both to patients suffering from severe heart disease, and to those anxious friends and attendants weary of witnessing their unalleviated woes. The Plate will best explain the construction and uses of the bed, which can be obtained of Mr. Heather Bigg, 56, Wimpole Street.

In order that this bed may be obtainable at the smallest practicable expense, and therefore as widely useful as possible to all classes, I have not reserved to myself any patent right or other interest in the invention, and I trust that no one else will limit its use by doing that from which I have purposely abstained.

CLUBBING OF THE FINGER-ENDS.



PLATE II. illustrates clubbing of the finger-ends in chronic Heart Disease. Its occurrence in consumption is too familiar to need illustration. It also occurs (as stated by Dr. Walshe, p. 287, "Diseases of the Lungs," 4th edition) on the affected side, in some cases of Empyema, and disappears on the removal of the fluid from the thorax. It may also be found in some cases of chronic Bronchitis, but only when very chronic, and when the right heart has suffered.

The condition favouring clubbing of the fingers, whether in Phthisis, Empyema, Chronic Bronchitis, or primary Heart disease, is long continued obstruction to the return of blood by the subclavian veins; and, whatever the pathological condition to which this is due, the clubbing of the finger-ends will be found to hold a direct relation to the extent and duration of the mechanical interference with the return of blood from the fingers to the right side of the heart—duration being a more important factor than extent.

Incurvation of the edges and points of the nails is a secondary condition, complicating clubbing, and will be found to hold a direct relation to the amount of wasting of adipose tissue at the tip of the finger. It is, therefore, much more constantly present in the clubbing of Phthisis than in that of other diseases.

These facts may be stated in the following aphorisms:—

Aphorism I.—Clubbing of the finger-ends on one or both sides of the body, with or without incurvation of the nails, may occur whenever the return of blood by one or both

subclavian veins is seriously obstructed for a considerable length of time.

Aphorism II.—Symmetrical clubbing of the finger-ends of both hands without incurvation of the sides and tips of the nails, is presumptive evidence of the existence of Heart Disease.

Aphorism III.—Clubbing of the finger-ends without incurvation of the sides and tips of the nails, is presumptive evidence against the existence of Phthisis.

Aphorism IV.—Symmetrical clubbing of the finger-ends conjoined with incurvation of the sides and tips of the nails, is a sign that obstruction to the return of blood by the subclavian veins and wasting of adipose tissue have co-existed.

Case I., Plate II., Fig. 1.—*Excessive Clubbing of the fingers, without incurvation of nails. Mitral and aortic disease; vestiges of rheumatic fever three and a-half years ago.*

Wm. N., 47, Jan. 3rd, 1865. At the base the bruit is exactly coetaneous with the impulse, and limited to its period. At the apex the impulse begins first, and about the middle of its period the bruit begins, and then continues up to the occurrence of the second sound. Second sound clear of bruit at both apex and base. The greatest intensity of basic-bruit is towards base, of apex-bruit towards apex.

Great respiratory distress on the slightest exercise. It commenced about two-and-a-half years ago, and has especially become worse during the last twelve months. His only complaint is of his breath: he "has no breath to move." Never felt anything wrong with the heart; not conscious of palpitation; no pain. Since the rheumatic fever the nose has been inclined to bleed, and piles, which existed before, have taken to bleeding. Lungs healthy. No anasarca.

After six days of complete rest the whole condition greatly improved. Respiration 20, pulse 92, but both hurried by the

least excreise. A great change has taken place in the fingers, the clubbed ends have become flaccid, which he says always occurs after a few days' rest.

Case II., Plate II., Fig. 2.—Excessive Clubbing of the fingers without incurvation of nails, congenital malformation of heart.

T. B., æt. 9 years. October, 1844. Fingers are much clubbed, without incurvation of nails. Nails and lips livid. Chest narrow and prominent in front. Impulse of heart most distinct 1 inch to left of left nipple, plainly seen along the lower margin of the fifth rib from left side, to $1\frac{1}{2}$ inches to right of median line. The whole of the impulse, first sound, and short pause, occupied by a long, loud, harsh, low-pitched bruit, heard from the apex to the clavicle, but most intensely in the middle of the sternum, between the third and fourth costal articulations. Heard most loudly during expiration, and occasionally changed into a musical high-toned bruit for an instant. To the left of the left nipple the first sound can be partly distinguished at the beginning of the bruit. Second sound clear just at the end of the bruit.

Loud venous murmurs in the jugulars. No anasarca. Lungs healthy. Child's spirits good; health moderately good if she leads a quiet life. But she "has no breath," and cannot bear exercise. Subject to attacks of bronchitis, with slight colds; no hæmoptysis; rather likes alcoholic liquors, they have no special effect.

No rheumatic history; no rheumatism in the family. Has suffered all her life.

Case III.—Clubbing of fingers, with immense enlargement of the heart, in a child. The chest-walls moulded over the heart during the progress of development and growth. Primary obstructive disease of aortic valves. Secondary incompetency of mitral and tricuspid valves.

Susan H. was under my care when the photograph was taken, at the age of 14, and from time to time subsequently,

always deriving great benefit from a few weeks' rest and treatment at the Royal Hospital. Finally, she was admitted to the emergency ward, under my colleague, Dr. Cruicknell, with an acute attack of catarrh and congestion of the lungs, from which she died; and Dr. Cruicknell has favoured me with the following details of the post-mortem examination, made by himself:—

Susan H., aged 17, post-mortem examination Jan. 24th, 1869, sixty hours after death.

Rigor mortis completely absent. The muscles were much wasted, and there was some œdema of the legs and labia majora, and marked distension of the abdomen, the skin covering which was greenish from decomposition.

The lips were dark purple, and there were traces of serous fluid having issued from the mouth. *The bulging of the left side of the chest, which had been so conspicuous during life, was no longer seen*, and there was little, if any, deviation from symmetry.

On removing the sternum, the enlarged heart was seen to fill nearly the whole of the space disclosed, nothing being seen of the lungs but the thin inner edges of the upper lobes. The pericardium was vascular, thickened, and adherent to all the adjacent parts, viz., both lungs, the sternum and diaphragm, and so intimately adherent to the heart, that in some parts it could not be separated without the removal of portions of the muscular tissue along with it. The great size of the heart was principally due to dilatation of the cavities, which was most marked on the left side. The mitral orifice admitted three fingers, the segments of the valve were free from vegetations, but much thickened, and the columnæ carneæ were hypertrophied. The aortic valves were greatly enlarged and thickened, with a single vegetation on each segment, consisting probably of an enlargement of the Corpus Arantii. The endocardium was healthy. There was very marked hypertrophy of that portion of the wall of the left ventricle which is immediately below the aortic valves, but it

did not extend to the middle and lower parts. The tricuspid orifice admitted three fingers, the valve was not thickened, and the pulmonary valves were also normal. Heart weighed 24 ozs.* The aorta was of small calibre, and appeared healthy.

The lungs were small, engorged, with surfaces somewhat mottled; quite free from collapse or consolidation; both adherent to the walls of the chest, but the adhesions were easily broken down. Many ounces of fluid in each pleura.

All the cavities of the heart and the large veins were gorged with imperfectly coagulated blood. Abdomen not opened.

The history of the case showed that the starting point of the heart disease had been an attack of rheumatic fever at the age of four years, in which the aortic valves had been involved, with resulting obstruction of the aortic orifice.

There had been no hæmoptysis till the last six months of life, and no dropsy till within three weeks of death, and no albuminuria till this final dropsy set in. The most remarkable feature of the post-mortem examination was the subsidence of that bulging of the chest-wall, which had been so peculiar and striking a characteristic during life; it showed how powerful the force of the blood-current through the heart had been to have thus made room for the distention of the organ. When that force was gone, the elasticity of the ribs brought them back to nearly their normal position; showing how great must have been the effect upon the heart's action of the elastic pressure of the ribs upon its parietes. It is a question in my mind whether this did not act more favourably than the reverse — assisting the muscular contractions by elastic force, somewhat as the uterine contractions are assisted by the pressure of the obstetrician's hand upon the abdominal parietes.

* The average weight of the full-grown, healthy, female heart is eight ounces and a half.

PAIN AT THE HEART AND IN ITS NEIGHBOURHOOD.*

BETWEEN a fully developed attack of angina pectoris and an ordinary "pain at the chest" from indigestion, the gradations are almost endless. The varieties in the character, exact seat, direction of extension, duration, collateral symptoms, &c., are extraordinary. The practitioner may well be puzzled in each particular case to set a just value upon the meaning and importance of the pain; and it is no wonder that "pain at the heart" should so often scare the patient, who is sure to have heard of some one who died suddenly with "exactly similar symptoms."

Very early in my medical career I witnessed, and had a great deal to do with, an appalling case of angina pectoris. It made so deep an impression on my mind that, when a student at St. Bartholomew's, I was always looking out for angina pectoris; and long after I began private practice (in 1849) I was haunted by the remembrance of this case, and anxiously watched every patient who complained of "pain at the heart," lest I should, by chance, fail to appreciate the incipient stage of this fearful complaint. As years went on I found that case after case, which I had thought might develop into angina pectoris, got well; that in other cases, attacks of angina would occur when least expected; that exceedingly few of my cases with pain at the heart died; and that, of course, the most interesting were those which

* Part of this was published in the "Medical Press and Circular," 1869-1870.

eventually recovered; while of those that died it was almost sure to happen, by one chance or another, that no *post-mortem* examination could be obtained. So that, after keeping a watchful note of a case for months or years, with the expectation of one day seeing the explanation of symptoms in the morbid anatomy of parts, the opportunity of doing so very rarely occurred. Yet it appeared to be an object worth a great deal of trouble to attempt to form some practical conclusions as to the meaning of the different varieties of pain at the heart and in its neighbourhood, both with regard to the possibility and prospects of relief or cure, and the means of such relief or cure; and, also, with a view to forming a correct prognosis, and being able to reassure the patient or his friends when needlessly alarmed; or, on the other hand, to warn of approaching danger those who failed to see the appalling import of certain apparently trivial symptoms. I, therefore, continued to keep careful notes of all marked cases of pain at the heart or in its neighbourhood that came before me, whether in private or public practice, taking more and more pains to obtain an accurate description of the seat, direction, and character of the painful sensations, and, whenever possible, watching the patients in their after life. In this way a large number of cases have been carefully collected, which I believe now fairly illustrate nearly all the varieties of pain at the heart. Unfortunately, the number of cases, and the length to which many of them necessarily run, make it impossible to give either the full details or to produce my complete series of illustrations of the different forms of pain. I must confine myself to selecting a few of the shorter cases, and such extracts from others as illustrate some of the aphorisms which have sprung out of my notes, and which appear to be of most interest to the practitioner.

Aphorism I.—Pain in the region of the heart and down the left arm does not necessarily indicate heart disease.

Case I.—Emma E., aged twenty-five, married; ill two years. Violent pain, sometimes aching, but more often pricking, begins under the left breast below the nipple, *extends up the left shoulder, down the left arm into the fingers*, and leaves a sense of numbness. Sometimes it extends to the epigastrium, but never to the right side or right shoulder. Some amount of pain is constant, but it is much aggravated by exercise or excitement, and especially by “windy spasms,” to which she is very subject. All food produces pain at the epigastrium soon after it is taken. Lying down produces headache and sense of fulness at the chest. Bowels and menstruation regular and normal, urine dark and depositing urates. She thinks she was quite well till a “bilious attack” two years ago; never vomited blood; no rheumatic history; no hereditary disease; heart’s dulness normal; action reluctant; sounds sharp; no bruit. Sulphate and carbonate of magnesia with bromide of potassium and nitrous ether every morning; effervescing citrate of soda and potass three times a day; abstinence from cheese and malt liquors. At the end of two weeks all symptoms much relieved. A blister to the epigastrium, and a powder of soda, ginger, and saccharated carbonate of iron in water after each meal. At the eighth week the patient was quite well.

Case II.—Martha G., aged twenty-five, single; ill three months. Pain at the epigastrium and under left breast directly after food; vomiting of food four hours after it is taken; *when sick the arms become numb*; physical signs normal; anæmie. Powder of soda, calumba, and ginger in water before each meal, alternated with effervescing citrate of soda and potass with hydrocyanic acid and a pill of sulphate of iron, quinine, and aloes, three times a day. At the third week quite well.

Case III.—Susan B., aged fifty-three, widow; getting gradually worse six years. Pain just below the left nipple, runs round to left axilla and scapula, *down the left arm*, and up the left side of neck; and the *left hand and arm die up to the elbow*. The pain is usually aching, but exercise brings on a “dreadful pain,” always accompanied by a peculiar paralysed feeling of the left side of the face, and by faintness. She would faint at these times if she did not sit down. Everybody, including her doctor, “who sees her during an attack, thinks she is dying;” eating brings on aggravation of pain; hot drinks relieve it the best; and she gets much relief from retching and vomiting white froth; has not much flatulence; aspect very eaehectic; appetite bad; loses flesh; she thinks the complaint was brought on by over-fatigue and anxiety during a ten years’ illness of her husband. Respiration feeble generally; first sound of heart defective, but no bruit; second sound peculiarly sharp and loud. Abstinence from cheese and malt liquor; powder of soda, ginger, and saccharated carbonate of iron in water after each meal, and a pill of quinine and aloes twice a day. At fifth week all symptoms and signs of illness gone; appetite good.

Case IV.—Jane C., aged twenty-eight, married; ill four years. Palpitation of the heart, and pain of a cutting character under the left breast, producing *numbness of the left shoulder and down the left arm*, and at times down the left leg; right side never affected; when the pain and numbness are bad she becomes hysterical, but does not feel so at first. After eating, left side distends, and there is pain below the left scapula; anæmie; flooded before confinement three years ago, and has been weak ever since, but worse since small-pox three months ago; anæmic bruit in jugulars and carotids; heart-sounds sharp; no bruit. Dover’s powder at night once; powder of soda, ginger, and saccharated carbonate of iron in water after food, alternated with effervescing citrate of potass and soda with bromide of potassium, citrate of iron and valerian. At the eighth week quite well.

Case V.—David Y., aged thirty-two ; ill a year this time, but was formerly under my care with similar symptoms, from which he quite recovered, and remained well many months. Constant pain in the left side, extending from a little below and to the right of left nipple to a little above it, also under left scapula *and down the left arm to the elbow* ; also down the left side of abdomen as far as the sigmoid flexure ; never extends to throat. The pain is lingering, dull, aching and burning ; increased by food, especially cheese ; not increased by exercise. It first came in the abdomen, and “worked up ;” urine charged with urates ; physical signs normal. Abstinence from cheese and malt liquor ; compound rhubarb pill, powder of soda, calumba, and ginger in water after meals, alternated with effervescing citrate of potash and soda. At the seventh week quite well in all respects.

Case VI.—James P., aged thirty-four ; ill three months. Pain and tightness at epigastrium, under left breast *and down the left arm*, in the direction of the ulnar nerve. It comes directly after food, lasts till digestion is over, and then stops ; not aggravated by exercise ; but worse when sitting still ; he sits much. The pain is attended with palpitation of the heart ; urine loaded with dark urates ; heart easily excited by nervousness ; sounds normal. Quite cured in three weeks by powder of soda, calumba, and ginger in water before meals, compound rhubarb pills, more exercise, and abstinence from cheese and malt liquor.

Such cases as these are exceedingly common, and I have a large number recorded, each differing in some of the details, and presenting some special point of interest. But the explanation of nearly all may be comprised under the four following heads :—

1.—A dyspepsia, which in the large majority is charac-

terised by an excess of acidity, and has been long neglected, or aggravated by mistaken treatment.

2.—An erratic neuralgia, taking its start from the gastric fibres of the Pneumogastric nerve.

3.—An impression on the vaso-motor system of nerves, producing a local interference with circulation. (With regard to this, I agree with Dr. Reynolds, in the remarks made in his paper, read at Oxford, August, 1868. See *British Medical Journal*, Dec. 26, p. 655.)

4.—Deteriorated blood, consequent upon the dyspepsia, defective Hygiene, and other causes, and the effects of this upon nutrition, especially of the nerves and heart.

The readiness with which the cases are cured by diet, regimen, and medicines, directed to the dyspepsia, deteriorated blood and vaso-motor disturbance, testifies to the absence of permanent organic disease. But in Cases 1 and 3 the heart-sounds showed that the normal muscular vigour of the systole was beginning to suffer, and hence the pains were aggravated when the heart was *taxed by exercise*. And this indication of threatened organic disease brings us appropriately to a second aphorism, which, notwithstanding such cases as I have instanced, is equally true and important with the first.

Aphorism II.—The conjunction of pain in the region of the heart and pain in the left arm may be a most important symptom of heart disease, and is never to be disregarded.

This will be illustrated by the following cases:—

Case VII.—John R., æt. forty, ill two years. Two years ago first felt a sense of direct pressure on the epigastrium (not under the nipple) on taking exercise, but not after food. Cessation of exercise for a few minutes removed the pain. But the pain has been gradually getting more severe and more easily produced ever since. During the last ten months

food as well as exercise has brought on the pain, and now either food or exercise *bring on, also, pain and numbness of the left arm, and of the thumb and all the fingers of the left hand,* lasting about an hour after food, but more severe in character after exercise than after food. Has frequent attacks of hard throbbing palpitation of the heart. He cannot now walk a hundred yards without pain; but five minutes' rest will take off the chief distress. After a glass of hot water can walk further without pain, and anything which expels wind always gives relief. During the pain, feels great languor, but no vertigo. *While the numbness lasts, the hand and arm are deadly white.* For several months, about eight months ago, the left leg used to get partly numb at the same time as the hand. Never had rheumatic fever or any other illness, except inflammation of the bowels in childhood, and sixteen years ago slight pains in the arms, possibly rheumatic. Sallow complexion, pale mucous membrane. Pulse 70, regular, both sides alike, soft, jerking, without *vis a tergo*. Heart's dulness normal, impulse strong between fifth and sixth ribs. First sound accompanies impulse and is normal; immediately followed by a long, soft, rather high-pitched, blowing bruit, replacing the short pause and the second sound, heard in greatest intensity at the base, also heard up to both right and left clavicles. At the base nothing is heard but the systolic sound and this long bruit; but at apex a separate much less distinct bruit immediately precedes the systolic sound. Blister to the epigastrium, powder of soda, ginger and calumba before food, abstinence from malt liquor and cheese; rest. After three weeks, pain not now produced by food if he remains quiet; but directly he walks the old pains come on, only with this alteration, that they are less felt at the epigastrium and more under the left breast.

This patient was watched for six months, and a variety of treatment directed to his heart symptoms. He was much benefited by losing the dyspeptic complication, so that his

distress was no longer produced by anything but exercise, and he said he was as well in health as he ever was in his life. But his physical signs remained the same, and the *slightest exertion* brought on the *pain at the heart and down the left arm*, with palpitation and short breath.

Case VIII.—Frederick E., thirty, ill twelve months. Pain of aching character in the middle of the sternum, above the level of the nipples, produced by exercise. If the exercise is continued *pain goes down both arms to the wrists*, but never to the fingers. If exercise is still further continued, pain gets worse and worse in both chest and arms till he is obliged to stop. After a few minutes' rest the pain goes, but returns as before with renewed attempts at exercise. These symptoms have been coming on twelve months from no assignable cause, except over-work. Taking food does not affect the pain, and never produces it. Never had rheumatic fever. Pulse the same on both sides, resistance very deficient. Heart's impulse strong, and diffused widely. Slight but decided increase of cardiac dulness above, and to the right, at the line of the nipples, dulness extends over the mesial line. First sound loud, no bruit at base or apex; second sound loud, and at base, down mid-sternum, and up to right and left of base, but not at apex, a peculiar "eluck" is heard at the end of the sound, giving the impression of a small jet of fluid jerked through an opening. He was sent home in a cab, and ordered to be kept perfectly quiet for a week—on no account to do anything which excited pain—and to be brought in a cab for fresh examination at the end of the time. It was afterwards ascertained that instead of obeying these orders, on the day after his visit to the hospital he walked, with great difficulty, from Islington to Parliament-street, Westminster, at the corner of which he dropped down dead, and those who saw him fall said he was "dead at once." No further information.

Case IX.—Mary P., forty-one, married; ill, more or less,

two years. Had rheumatic fever fourteen years ago. Pain at the heart, and *in the left shoulder, and down the left arm to the elbow, and to the little and ring fingers* whenever the heart palpitates—that is when she is flurried, or ascends, or hurries; not produced by food. When the pain comes she turns giddy. Sleeps heavily without pain or distress. Loud diastolic bruit at apex. First sound clear of bruit, but feeble; second sound at base, very loud and clear. Ordered rest. Not seen again.

Case X.—Henry L., fifty-five; ill, more or less, eight years; worse of late. For eight years subject to dull pains over lower part of sternum, extending across chest, and accompanied by *numbness of both arms*. The pain begins a quarter of an hour after food, and is relieved by eructation; no cough, but some dyspnoea on exertion, and on taking exercise, a pain comes in the centre of the lower third of the sternum, and both ascends and descends from this spot, *affecting the arms*, and if exercise is continued the oppressive pain goes down the abdomen in the direction of the large vessels. He cannot walk five minutes without the pain coming in the sternum; if he then rests he can go on without pain so long as he walks very quietly, but if he hurries, the pain returns and stops him as at first. Had rheumatic fever four years ago—no other history. Cardiac dulness at fourth costal cartilage extends a little over mesial line to right. A very soft low-pitched systolic bruit, heard most distinctly in the centre of sternum between the fourth costal cartilages, descends a little to the right, fades away on ascending. Powder of ginger, calumba, and soda; blue pill, and compound rhubarb occasionally; iron and quinine daily; rest. After four weeks, no pain from any cause but exercise; after eight weeks the pain ceased to extend into the abdomen, and he had learnt to manage himself so as to return to his business, and to take exercise moderately without pain; but any attempt to hurry or push on, when pain threatened, still produced it.

In all of these cases the physical signs show the existence of incurable organic disease. The principal points of practical interest are as follows:—

1. The similarity between the symptoms produced by the organic disease and those produced by the dyspepsia.

2. The frequency with which dyspeptic symptoms are conjoined with those of organic disease.

3. The danger of mistaking the relief given by removing the dyspepsia for a cure of the organic affection—a mistake by which the practitioner may be led to release the patient from those cautions and restrictions upon which his future safety depends.

4. The great importance of diagnosing and treating the dyspepsia attendant upon heart disease; not only on account of the immense comfort which can thus be secured for the patient, but also because, by this means, an important addition to the difficulties with which the heart is encumbered may be removed, and the patient's life thereby rendered much safer.

5. Case VIII. is a striking example of the great caution required in giving a prognosis in these cases until they have been carefully watched.

6. The extension of painful sensations to the *right* arm in severe cases—a point to which I shall have to refer again.

7. A most important and interesting point, exemplified especially in Cases VII., VIII., and X., is the rapidity with which rest from exercise relieves the pain, and the facility with which the heart accommodates itself to its defects if permitted. We cannot be too much alive to this in treating these cases, for by taking judicious advantage of it in our directions as to the habits and pursuits of patients, and by explaining the *rationale* of it to them, a permanent accommodation of the heart to its difficulties may be gradually

established in many cases which otherwise would soon become fatal.

8. The point, however, to which I wish especially to direct attention is the distinctive diagnosis between *pain at the heart and in the left arm* due only to dyspepsia, and the same symptoms due to organic and incurable disease. It amounts to this—that whereas the first is soon cured by appropriate remedies for the dyspepsia, the second remains after such means have been adopted, and after all dyspeptic symptoms have disappeared. But beyond this, the diagnosis may often be made without waiting for the effects of treatment, though it needs great circumspection. The first point to make clear is, whether the pain at the heart, etc., comes on after food or after exercise; but here it is necessary to distinguish between exercise taken after food, and exercise taken when the stomach is free from food. If the pain is only excited by exercise taken with a full stomach, it may still be due to dyspepsia only; but—

Aphorism III.—If pain is excited by exercise taken when the stomach is not distended with food or gas, and especially if it comes on quickly and increases steadily in severity with the continuance of exercise, it is almost certain that there is some serious disease of the circulatory organs.

A perfectly healthy heart, fully nourished by healthy blood, ought to be able to bear an ordinary amount of stomach distension, either with food or gas, without sufficient embarrassment to lead to any serious inconvenience, even with the addition of moderate exercise. Therefore,—

Aphorism IV.—When it is found that flatulence or a full meal embarrasses the heart painfully, a careful investigation should be made into the condition both of the organ itself and of the blood.

The following case shows the importance of such precautions, and of not too readily deciding that the organ is healthy

because the painful symptoms are relieved by a removal of the dyspepsia.

Case XI.—R. P., fifty-five, a fine, tall, well-built man, consulted me December, 1862, when I made the following note ; —palpitation very easily set up by hurry or excitement, and always after breakfast, if he moves. The palpitation is *accompanied by severe aching pains in the arms and scapulae*, and sometimes there is a little swimminess. These symptoms are of about four months' duration. For the last twelve months he has been much confined to a counting-house lighted with gas ; for five years before this, lived in London, but took much out-of-door exercise. Anterior to that, he lived in the country, hunting and shooting much, living generously, and enjoying very fine health.

Paternal grandfather very gouty. Father slightly gouty. Eldest brother gouty. Urine very acid, loaded with urates. Bowels irregular. Pulse fair average. Heart-sounds sharp and loud, otherwise normal, cardiac dulness normal. Ordered diet, regimen, and medicines for gouty dyspepsia, and in two weeks he was *relieved from all uncomfortable symptoms*. Ordered a continuance of the same plan of treatment, and cautioned him as to the management of his thin-walled heart. I heard no more of this patient till January, 1868, when I was summoned to a country village to see him in consultation with his family doctor, and found him sinking. He was breathless ; pulse extremely quick, very feeble, irregular, intermitting ; spitting a considerable quantity of blood. Heart's action fluttering, irregular, no bruit, cardiac dulness normal. Liver four inches below the ribs, round, smooth, and blunt. Legs and thighs œdematous, no ascites. Urine scanty, loaded with urates, acid, no albumen. Intellect quite clear. I learnt that after I saw him in 1862 he had lost his dyspeptic symptoms, and very much improved in health, but always suffered from palpitation on exertion, and had easily got chilled in cold weather. In the frost of 1866

he had been "paralyzed with cold," and nearly died from walking home one night in the frost. But the immediate cause of his present condition was prolonged and excessive *overtax of his weak heart* by ill-advised over-exertion. He had undertaken a walking tour in the Isle of Wight with much younger and stronger men, felt getting more and more ill every day, but was persuaded that it was *due to dyspepsia*, and that more walking exercise was the remedy. Thus persuaded, he foolishly pushed on till he came to a dead stand, and was brought to his home with difficulty in an invalid carriage four days before I was sent for. He only lived nine days. His doctor wrote me that after I left him the hæmoptysis and anasæra increased, and the other symptoms got worse. On the evening of the night on which he died, the doctor found him sitting up in bed, having been seized with intense *pain about the base of the heart*, face livid, panting much for breath, intellect clear. This state continued up to his death, which was sudden at last.

Aphorism V.—Important heart disease may exist, and yet pain at the heart and in its neighbourhood be absent.

This may be illustrated by the following case:—

Case XII.—George B., æt. twenty-eight, first consulted me in 1863, suffering from rheumatism in one wrist, subject ever since childhood to frequent repetitions of "rheumatic fever." He was not aware that anything was wrong with his heart; he never had pain or inconvenience from it. Examination, however, discovered extensive valvular disease. He was instructed in the use of alkalies and other precautions for preventing recurrence of his rheumatic attacks, and for guarding himself from the effects of his heart disease, and was not heard of again till April, 1867, when he applied to me in consequence of having lost his preventive prescriptions and directions, and some threatenings of rheumatism re-appearing in his wrists. He stated that he had kept free from rheumatism so long as he followed the directions given in

1863—a much longer interval of freedom than he had hitherto known. *His heart had not caused him any inconvenience.* Diastolic bruit at base heard in greatest intensity across the sternum at level of the nipple, also loud systolic bruit at apex.

Important disease of both aortic and mitral valves had existed, certainly, for more than four years without giving rise to pain or sufficient inconvenience to attract the attention of the patient.

Case XIII.—Isaac S., æt. sixty-eight, consulted me, Dec. 1858, for œdema of the feet and legs of a few days' standing, coming on during a slight attack of bronchial catarrh. No albumen in the urine. Physical signs and symptoms of considerable hypertrophy and degeneration of heart. During the greater part of his life enjoyed uninterrupted good health, lived generously, took very little out-of-door exercise, and gradually became stout. But two years ago changed his habits suddenly, restricting his diet and taking long walks. By these means he had become less stout, but found progressive breathlessness and exhaustion during exercise. These he had been induced to attribute to his stoutness, and advised to continue his walks and spare diet as a remedy. He had *never suffered any pain or inconvenience at the heart or in its neighbourhood* to attract attention to this as a cause of his difficulties.

Under a restorative plan of treatment he recovered from his bronchial affection, lost the œdema, and was improving in strength, but still easily turned faint. A short time afterwards he was found dead in his bed, sitting forward, his head dropped upon his knees, and the scent-bottle, which he was accustomed to use when faint, just slipping from his hand. He had died so quietly that it had not disturbed his wife, who was sleeping by his side.

This case not only illustrates the absence of pain in some of the most fatal forms of cardiac affection, but also an im-

portant practical lesson in the management of heart disease, which may be stated thus:—

Aphorism VI.—When once a heart has become hypertrophied, its active nutrition should be studiously maintained, and any change in the habits of the patient, with regard to exercise or diet, should be made with the greatest caution.

Aphorism V. may be further illustrated by Cases XIV. and XV.

Case XIV.—Mary Anne G. æt. ten, had rheumatic fever at seven years of age, and three attacks since, now suffering from bronchitis and rheumatism in the limbs. The child states, and the mother confirms it, that she has *never had any pain in the chest*. Very loud mitral systolic bruit, also a well marked aortic systolic bruit. She was seven weeks under treatment, during which time the heart gave her no inconvenience, and she was discharged apparently quite well, but without change in the physical signs at the heart.

Case XV.—John A., æt. sixty-two, consulted me, March, 1865, for pain in the rectum and coccyx, which were found to be due to hæmorrhoids and to distortion of the coccyx by over-riding. I found his pulse very feeble, 56, *regular*, the same on both sides. He was aware it had “been so all his life.” But he said he thought nothing of it, for he had always been able to bear more fatigue than most men. His breath never short, always able to run up hill like other people. He certainly looked the picture of health, and not a trace of æreus could be found in either eye. I examined his heart, and I discovered a loud, rough, systolic bruit at the base, having its greatest intensity at the right side of sternum, and heard up to the right clavicle, but not to the left. At the apex, a systolic bruit of somewhat musical timbre. No abnormal cardiac dulness. He admitted that sometimes,

when over-tired, the left arm felt weak and ached, but that he never felt any inconvenience from his heart, and he was certain that he never had any pain in or about it. He recollected that *forty years ago*, the late Mr. Palmer, of Birmingham, seeing him after he had ridden on horseback 200 miles in two days and nights, for a wager, and finding his pulse very low, was induced to examine his heart, and then told him it was seriously diseased, and that he must never take violent exercise again; but Mr. A. felt so well, that he regarded the doctor's opinion as nonsense, and never took any notice of the caution, and never had his chest examined from that time to this, or thought any more about his heart. *He is certain the heart never gave him pain or inconvenience.* Has suffered all his life, off and on, from acid dyspepsia, with uneasiness at the epigastrium after eating, but by no means constantly. The ring finger of each hand is flexed on the palm by hardened fascia, attributed by him to holding the bridle. Has had two accidents to left shoulder, but only slight ones. He is sure he never had rheumatic fever. Has ridden on horseback immense distances all his life; often taken long walks; and, since railroads have been in use, has taken five or six fatiguing railway journeys weekly, often early in the morning and late at night, and has gone long without food, and long without rest, and thought nothing of it; always very temperate. His brother and paternal uncle had gout.

December, 1869.—Continues *perfectly free from heart symptoms*; pulse and all physical signs as before; continues his extraordinarily active habits, and has just passed, without damage, through a severe affliction from the death of his son.

This is a very remarkable case. It is scarcely possible to find a man who has for years taken so much exercise, and so entirely disregarded all precautions as to rest, regularity of meals, and overtaken of every kind, except intemperance, and who has, at the same time, enjoyed better health and

less inconvenience from any complaint referable to the heart. Yet we find signs of marked obstructive disease of the aortic and of regurgitant disease of the mitral valves, and get a clear history that signs of serious heart disease (in all probability the same as now present) existed forty years ago.

He had evidently inherited a gouty diathesis, and, had the heart disease been detected only recently, with no history of its long continuance, it might fairly have been attributed to atheromatous disease connected with the gouty diathesis. But I think we must conclude that, had such disease existed forty years, it would have been more progressive, and that some other evidences of degeneration would have been present. I am inclined to consider the valvular disease as either congenital, or the vestige of some forgotten attack of rheumatic fever in early childhood, and that the absence of all inconvenience or secondary damage throughout a long and trying life is to be accounted for by considering that with the growth and development of the body, the whole circulatory system was made to *accommodate itself* to the altered condition of the heart. In this light I regard the slowness of the pulse throughout life as a most interesting and instructive feature, suggestive of the most valuable practical hints for treatment. It is probable that this constituted the main element of the safeguard placed by nature upon the hydraulic apparatus of the patient. The circulation was so regulated that it was scarcely possible to hamper the central organs. Hurry is the death-word in heart disease; and, in this case, nature seems to have put such an effectual drag upon the wheels that hurry was impossible. The case not only illustrates the absence of pain, but also the following:—

Aphorism VII.—By persistently regulating the circulation

in accordance with the capabilities of a diseased heart, an accommodation may be established throughout the organism to the morbid alterations in the hydraulic apparatus.

This may be further illustrated by the following remarkable case:—

Case XVI.—G. H., aged fifty-eight, a stout, florid, short-necked man, accustomed for many years to indulge freely in the pleasures of the table, both in eating and drinking, and to take very little exercise. Has frequently suffered from severe attacks of acute dyspepsia after over-feeding: also from paroxysms of colic, apparently connected with gall-stones, though no calculi have been known to pass. Such was the history given me by his family doctor, by whom I was consulted, about December, 1858, in consequence of a succession of frightful attacks of angina pectoris. These came on at first only after unusual exercise or over-eating, but they became more and more easily excited, and at last they were produced by the least exertion—such, for example, as getting in or out of a Hansom cab, or by an ordinary solid meal, without any exertion, if a little over full. He was an obstinate man, and would eat unwholesome food and take exercise, in spite of the terrible suffering and danger to life which followed. Hence there were frequent opportunities of witnessing the paroxysms. They were easily distinguished from his gall-stone attacks and his acute dyspeptic symptoms. On more than one occasion I was with him during an attack. Other physicians besides myself saw the case, and entirely agreed with me that the seizures were typical paroxysms of angina pectoris. He was going on from bad to worse, persisting in following his profession, though daily threatened with death; when a new set of symptoms appeared, which obliged him to take to his bed, and confined him to the house from the beginning of 1859 till May, 1860. During that time he had severe attacks of bronchitis, of pleurisy, of con-

gestion of the liver, and of *intermittent* albuminuria, but not one paroxysm of angina pectoris. After May, 1860, he became sufficiently well to take gentle walks and carriage drives, at a slow pace on level ground, without suffering further inconvenience at the heart than a sense of fulness and threatening of pain, and he had *no more attacks of angina pectoris* up to the time of his death, in 1864. I did not see him at this time; but his family doctor, who attended him throughout and examined him after death, informed me that "he died of bursting of an abscess in the gall-bladder, implicating the peritoneum and omentum. A large gall-stone and several smaller ones were found loose in the abdomen, close to the ruptured gall-bladder. The lungs were healthy, but covered with extensive pleuritic adhesions. Kidneys granular, capsules adherent. Heart large, thin-walled, pale, flabby; the base turned over to the right, the apex pushed up to the left by the left lobe of the liver, so that the heart lay nearly horizontally. The coronary arteries, even to their branches as small as a needle, were so hardened that they were able to be separated from the substance of the heart like a branch of coral. Yet, with all this complicated organic interference with the proper action of the central organ of the hydraulic apparatus, rest and time had produced sufficient adjustment and accommodation to enable the patient to take moderate exercise during the last five years of his life without a recurrence of his angina pectoris.

In my remarks upon Cases VII., VIII., IX. and X., illustrating the conjunction of pain in the arm and pain at the heart, I pointed out the importance of observing with what rapidity even the most severe pain was relieved by rest from the exercise that had produced it, and how quickly the circulatory organs adjusted their defects so as to permit of renewed exertion.

It is of the utmost importance to remember these facts in the management and treatment of heart disease, whether

functional or organic. We should always order our patients to take the warning given by nature, and stop when called upon to do so by pain at the heart or in its neighbourhood. To push on in spite of the warning is to multiply the heart's difficulties at a compound rate with each pulsation, and thus to produce secondary diseases (as in Case XI.), whereas the cases I have related show, that, by humouring the circulation cautiously and persistently, a gradual adjustment of defects may become established in course of time, by which the patient's life may be indefinitely prolonged in comparative comfort.

There is, however, a most important practical point in connection with these cases *never to be forgotten*; one requiring great tact in the dietetic and hygienic regulations. I mean the danger—I may say the certainty—that without such tact the rigorous and persistent restriction of active exercise, necessary in the early part of the treatment, will lead to degeneration, or, at the least, to weakness of the muscular structure of the heart, and to impaired digestion and defective action of the liver and bowels; so that when, at last, accommodation of the heart to its difficulties ought to be established, this result is found to be frustrated by the loss of muscular power and of general health, which has been insidiously going on. The precaution necessary in such cases may, I think, well form—

Aphorism VIII.—During the time of forced rest, necessary to establish accommodation throughout the organism to morbid alterations in the hydraulic apparatus, the hygienic arrangements must be so regulated as to prevent derangement of the chylipoietic system and to promote muscular vigour.

In investigating the history of degeneration of the heart

it will commonly be found (as in Case XI.) that the first step in the morbid changes definitely dates from a time when an active vigorous man, accustomed to out-of-door exercise, suddenly changed his habits and assumed a sedentary in-door life. Thus, when a robust fox-hunter meets with some surgical injury, requiring protracted confinement to his couch, this is one of the melancholy complications to be scrupulously guarded against by his surgeon; otherwise he may live to hear the painful remark applied to his patient, that "since his accident he has never been the man he used to be." When an active, bustling, hardy, country matron becomes the subject of severe uterine hæmorrhage at a time when the heart is undergoing that normal temporary hypertrophy which M. Larcher has shown to be an accompaniment of pregnancy, the utmost vigilance of her doctor is required to see that the normal quantity and quality of blood is speedily restored, and her accustomed vigorous out-of-door habits resumed, or he will find his patient "an altered woman" for the rest of her life—the heart having lost its normal nutrition and become enfeebled during the existence of defective blood and the want of sufficient air and exercise.

Although these remarks may appear somewhat *trite*, they cannot be too often repeated for the benefit of those who have not yet learnt their truth by long experience. I have just witnessed a melancholy case, in which judicious advice given at the right time might have saved a valuable life from premature decay.

Case XVII.—A. J., aged sixty. When I was consulted he was dying with degeneration of the heart and other organs, and I elicited the following history:—He was a lawyer in extensive practice, upon whose active work depended the happiness of a large circle of relatives, so that he was obliged to spend the whole of his business-day in his office, and his

evenings with his family and friends. Up to seven years ago he was a fine, powerful, vigorous man, not knowing a day's discomfort from anything worse than the effects of too good an appetite. He had been accustomed for years to live a little way out of town, and *to ride on horseback to and from his office*. This gave him a good allowance of air and exercise; but at length, tempted by the greater ease and rapidity of the "railroad," he gave up his rides and took to the train, thus losing all his invigorating out-of-door exercise and his allowance of fresh air. In other respects his habits continued as before. Nobody pointed out to him *the grave error of this change in his mode of life*. For a while he did not feel any alteration in his health. Soon, however, symptoms of dyspepsia commenced in their usual insidious way, but did not lead him to alter his hygienic arrangements. It was easy to discover, by careful inquiry, that the beginning of the degenerative diseases from which he was dying dated from the discontinuance of his horse-exercise. (See Aphorism VI.)

In connection with diseases of the heart there is a special description of THROAT SYMPTOMS, which, according to my experience, is of the most fatal portent. It needs considerable pains to distinguish it from a number of somewhat similar symptoms of far less serious importance; and as I have taken much trouble in the investigation of this important but rather rare symptom, I will illustrate it by a few marked cases.

The following Case (XVIII.), with remarks made at the time of its occurrence, is copied almost *verbatim* from my note book.

J. H., aged forty-four, consulted me January 16th, 1867, saying that he had been under several physicians during the last nine months without the slightest benefit.

In 1860 had rheumatism in the knees, ankles, arms, and

shoulders—not in the toes or feet. He thought it was brought on by change of climate from Cork to London, and change of habits. He had then only recently come over. In Ireland he lived out of doors as a country gentleman, taking much exercise, drinking whiskey-and-water, and living well, but taking no beer. In London his occupation is entirely sedentary, and he drinks beer.

Nine months ago he had the first attack of the kind for which he now seeks advice, and for which he has since then been under various doctors. He thought the first attack was brought on by a complication of troubles—the sickness of a child, the death of another child in convulsions, and the fatigue of an election in which he exerted himself much. The attack was sudden, but the returns have been frequent. The following graphic description is by the patient:—

“ I start to walk perfectly free from pain ; after about ten to twenty paces a darting pain comes in the *pomum Adami*, something like a toothache in the windpipe ; it produces a feeling of depression and weakness, always accompanied by eructation of volumes of wind, which relieves pain for a second or two, but the pain returns unless I stand still. The pain goes away altogether if I cease to walk, but if I go on it travels down the chest, not in the centre, but towards the right of sternum, and then, about the level of the nipples, it crosses the sternum and remains over a space of three or four inches between the nipples with a sense of pressure, *not* a darting, as in the throat. I keep on belching wind all the time, and a sense of *soreness* is left in the track of the pain when it goes away. No amount of belching of wind removes the pain if exercise is continued. It never goes till I stop walking ; directly the pain stops the wind stops. But I get the wind sometimes while sitting still, but no pain with it then. Sometimes there is slight pain in the throat while eating, but no difficulty in swallowing ; sometimes there is a dead deep pain between the navel and the ensiform cartilage,

not in the pit of the stomach, but in the median line, and it feels as though it were far back towards the spine. This also is accompanied by wind. Very seldom any wind passes downwards. When the pain is bad, if I push on, walking forty or fifty paces in spite of it, it greatly increases in severity till it spreads down both arms, and produces such a sense of oppressive pain, weakness, and general distress, that I am obliged to lean against a wall or sit on the ground ; I cannot go on. All goes off in a few seconds, on stopping, to return again with walking. On repeating the short walk and the stop three or four times, all pain will sometimes go and I can walk for miles. I do not find that the discharge of any amount of wind will save me from the pain when I attempt to walk again. Sometimes the wind will be very bad while walking, without any pain. The heart never palpitates, throbs, or jumps, or is noticeable to myself in any way."

A tall, well-built man, light complexion, and with a worn, partially anæmic degenerative aspect, moderately fat. Urine to-day pale, slightly acid ; no albumen—a cloud of phosphates by heat, cleared by acid. Conjunctiva pale.

Physical Signs.—Heart's dulness normal, right auricle not increased (Daldy), action stumbling and labouring, sounds blunt. First sound so blunt at base and along aorta that it is difficult to be certain whether or not there is a bruit.

Pulse feeble, hesitating ; same on both sides.

Ordered Powder of soda, potass, ginger, and calumba ; compound mixture of iron ; a pill of compound rhubarb, capsicum, and extract of colchicum. Meat diet, avoiding farinaceæ, and beer and cheese.

January 22nd he brought the following diary :—

"Jan. 16.—After leaving Dr. Dobell, came home by rail ; slight pain when walking from it. Took the medicine, went to bed at eleven. Rather a restless night ; awoke at five a.m. with *pain in the throat*, which lasted about half-an-hour but did not extend to the chest. Less nervous.

"Jan. 17.—Slight pain while dressing, washed head and

chest in cold water; took powder; had roast mutton and coffee for breakfast; then took medicine; went to town by 'bus; dinner of soup and mutton, at two—no drink. Had occasion to walk a little in the evening, and had a slight return of pain. Supper at 9.30—mutton and ham; bed at 11; woke at two with slight *pain in the throat*, and remained rather restless.

“Jan. 18.—Up at 8.15, pain not so bad as usual; washed head and shoulders in cold water; breakfast, roast beef and bacon and coffee; very little pain in walking to the 'bus to-day; feel better, not so nervous. Dinner, roast mutton and potatoes and omelette; got the pain while returning from dinner and in going to the 'bus to go home at night. Supper, whiskey and water, stewed roast beef; bed at 11. Awoke about 12.20 with pain and great discharge of wind, which kept on for about an hour; remainder of night very restless.

“Jan. 19.—Up at 8.15, rather weak; egg and coffee for breakfast, very little pain; roast beef for dinner. A slight touch of *pain in face, particularly the lower jaw*; had a short walk and a little pain. Eels for supper, and whiskey and water; to bed at 11.30. No pain during the night, but restless.

“Jan. 20.—Up at 9; mutton and bacon, with coffee, for breakfast; went for a walk at 11.30. *Walked about four miles up Highgate Hill and back*; walked pretty well, and had very little pain. Boiled beef for dinner, whiskey and hot water; the same for supper. To bed at 11.30, rather restless; had the pain for fifteen minutes at three o'clock.

“Jan. 21.—Up at 8.15; bacon and coffee; rode to the Bank and walked to Clerkenwell; very little pain. Soup and boiled mutton for dinner—no drink. Walked to the 'bus, much pain, and on leaving the 'bus to go home—about 100 yards—had the pain badly. Cold boiled beef for supper, whiskey and water. Bed at 11.30; no pain, rather restless.

“Jan. 22.—Up at 8.15; cold beef and coffee; rode to City and walked to Clerkenwell; not much pain. Jugged hare for dinner—no drink. Walked from Clerkenwell to Holloway in evening with very little pain, *principally in the throat*. To bed at 11.30, rather restless, but no pain. During these days medicines taken regularly.”

Jan. 22.—The foregoing report was considered by the patient to mark considerable improvement.

Feb. 14.—He seemed better, went on with treatment, and was in good spirits and hope, till he got cold during bad weather a week ago. He has been laid up with severe bronchitis. When the cough comes in a long fit it produces the *pain in the pectus Adami*, and also pain above the navel (before described); the sternal pain does not come on, and has hardly been felt since last note.

No new physical signs except of catarrh of large tubes and trachea. Since the bronchitis the *pain in the pectus Adami* is so easily produced that he can hardly walk at all without its coming on and running rapidly down to epigastrium, so that he is obliged to stop directly; but the “spreading pain” does not come on. (It is to be observed that this used to be produced only when he pushed on with exercise which he is not now able to do.) A week ago, when cough was very severe, a little black blood passed *after* a motion.

Feb. 19.—The severe attack of bronchitis has reduced him much, and the old pains are worse. When pain comes in larynx it also comes in the teeth and face, of the same character as severe neuralgia, to which he was liable twenty years ago. The pain then goes to the hypogastric region, and if it lasts long it next comes to front of chest and cardiac region.

Pulse very irregular to-day, no thrill, no bruit at heart.

February 25.—Walked two miles to-day without pain. Laryngeal and bronchial sounds harsh this morning. The aorta down to the navel, examined directly after walking, in a state of irregular pulsation. No bruit in aorta. Heart

pulsating irregularly; no bruit. Pulse on both sides the same. Wind less troublesome; appetite fair.

March 3rd, I received the following letter:—

“I am very sorry to inform you that my brother-in-law, Mr. J. H——, died this morning at three. He was out walking last evening, and appeared to have somewhat improved in health. The medical man who was called in assured the family of the hopelessness of the case, which was the cause of your not being sent for; he died within an hour of the doctor's visit.”

I could not obtain permission for a *post-mortem*, which was a great disappointment. I learnt the following particulars from one of his household:—He was thought to be better on Saturday, March 2nd, and was out during the day. He started for a walk at 5 p.m. with his wife, but *the throat pain* came on severely, and he returned. It soon went off, and he was cheerful and seemed well, but soon after going to bed it came back, and he jumped out of bed saying he could not get breath, and rushed into the passage, sat down there on a chair and coughed up some white milky-looking froth, but no blood. The froth then collected rapidly and rattled in his throat, the pain at the chest continuing all the time. A doctor was sent for, and Mr. H—— remained sitting in the chair in the passage till he died in about an hour after the attack began.

The doctor wrote me as follows:—“March 4. An old patient of mine, Mr. J. H——, who I find has for some time been under your advice, died suddenly yesterday morning. He has consulted me at various times about himself, but chiefly concerning paroxysms of angina pectoris, which at more or less frequent intervals attacked him. I have not been able to obtain a *post-mortem*. He has been under several medical men, but I have never been able to make out if any of them had arrived at an idea of the cause of his suffering. If you can spare time I shall feel obliged by your giving me your views concerning him.”

March 6th the doctor wrote as follows, in answer to a letter from me asking him for particulars of the case:—

“I received your note which must have crossed one of mine. . . . I found poor Mr. H——, about half-past twelve on Sunday morning, leaning forward in a chair bathed in a profuse cold perspiration, and breathing with the greatest difficulty. He did not complain *of any pain*, only of an extreme sense of exhaustion with difficulty of breathing. His pulse was rapid and weak, and his chest blocked with mucus, of which, during the hour and a half he lived, he coughed up about half-a-pint; it looked slightly red as though tinged with blood, but by the dim light I could not be certain of this. He was conscious to the last. In the absence of a *post mortem* I presume his symptoms can only be accounted for by some degenerated condition of the heart, but in life, I think, the stethoscope did not afford any evidence of it.”

This is a remarkably illustrative case of death from degeneration of the heart and vessels. The following are the points of most importance:—

1. The history of change from an active out-of-door life in the country to a sedentary and monotonous one in town, at an age when degenerative changes are especially apt to occur in organs accustomed to vigorous action, if that vigorous action is interfered with. (See Aphorism VIII.)

2. The history of an exciting cause of the first marked attack of cardiac incompetency and cardiac distress, in the conjunction of depressing emotions, night watching, and an exciting, fatiguing, bodily activity, to which the patient had for some time ceased to be accustomed.

3. The symptoms, the aspect of the patient, the pulse, the *pains in the throat*, chest, abdomen, and arms, &c., so graphically described in the patient's diary. The rapidity with which a certain train of symptoms was produced by exercise;

the speed with which they all vanished with rest; and the flatulence.

The particulars of the mode in which belching of wind occurred were noted with care, because this symptom is very important, very generally present, and very apt to delude both the patient and his doctor. It occurs, as will be seen in many of my cases, where the pain at the heart appears to be due to the derangement of stomach causing the flatulence, and to the pressure of the flatulent distension—in cases which present ominous symptoms but easily get well. It occurs in the most serious cases, like the one under consideration, in which it may be observed, that, although the attacks of pain were almost invariably accompanied by belching of wind, yet the attacks were not brought on *without exercise*, and no amount of wind-belching removed the pain if exercise was continued. In cases where the heart is not seriously incompetent, and does not excite pain, except when greatly incommoded by stomach or intestinal distension, exercise will cause pain at the heart if taken while the flatulent distension is great, but the expulsion of wind removes the pain, even though exercise be continued, because, except for the wind, the heart is competent for its duties. (See Aphorisms III. and IV.)

The absence of palpitation, or any sense of heart disturbance to the patient, except the pain, is a marked and important point in the case, *distinguishing it from the ever-palpitating excitable hearts of the hysterical and dyspeptic*, which are always leading the patient to fancy there is heart disease when there is none. A very remarkable fact, again, is the accommodation of the heart and vessels to their difficulties after several attempts at exercise had been made. (See Cases VII., VIII., IX., X.)

I may call attention, also, to the decisive improvement which

took place for a time, when, by the combined influence of hygiene and medicine, as many as possible of the removable causes of interference with the heart's action had been removed. (See remarks following Case X.) Could these favourable circumstances have been longer maintained, some more permanent improvement might possibly have been attained ; but, unfortunately, an attack of influenza and bronchitis supplied one of those accidents of life with which the heart was incompetent to cope, and the patient was hurried to his grave.

The point, however, to which I attach the greatest importance in this case, and which has led me to give it in so much detail, is the *description of throat pain*, which, according to my experience, is one of the most fatal symptoms which we meet with in connection with diseases of the heart.

Case XIX.—June 27, 1868. The following paragraph appeared in the *Pall Mall Gazette* :—

“ Mr. Bedford held a long inquiry in St. George's Hospital yesterday respecting the death of a gentleman named S—B— aged sixty-one. Mr. C— C— of Kensington, said that on Wednesday night, about a quarter past ten o'clock, he saw the deceased leaning over the railings opposite Rutland-gate, in Rotten-row. There was a woman near him, who said the gentleman was very ill, and she asked him to go and fetch a policeman. When the witness came up to him he *pointed to his throat* and said he thought he should be suffocated. He walked with him about 200 yards, when he dropped, being unable to walk any further. He then appeared red in the face. He was put into a cab and removed to the hospital. The policeman who took the gentleman to the hospital said he thought he died before they got there. Mrs. S— said the deceased had lodged with her for ten years, and often complained of a *pain in the throat*. He had relations, but

he always told her that if anything happened to him she was not to communicate with them. The physician at the hospital who had made the post-mortem examination said death arose from disease of the heart. The jury found accordingly."

Being interested to know the state of heart which accompanied the marked and *fatal throat symptoms* in this case, I obtained, through the kindness of my colleague, Dr. G. Goddard Rogers, the following note from the St. George's Hospital books. From this it appears that some excitement, probably sexual, had disturbed the circulation, and taxed the degenerated heart beyond its powers. The *pain in the throat* which had occurred on previous occasions was now again produced by this dangerous embarrassment of the heart, and as in Cases XVIII. and XX., heralded the fatal termination of the case.

St. George's Hospital Note.—"S— B— was talking to a woman outside Hyde Park, when he suddenly exclaimed, 'Oh! my throat! I shall choke.' He walked a little distance, and was then placed on a seat, and expired. He had been dead a quarter of an hour when taken to St. George's. The extremities, and indeed all the body, were cold, but some warmth remained about the præcordial region. There was white froth over the nose and mouth.

"*Examination forty hours after death.*—Body well developed. No external marks of violence. Brain congested; increased number of puncta vasculosa, and a considerable amount of fluid in sub-arachnoid space. Heart semi-contracted and empty; valves blood-stained. Aorta covered with soft atheroma, blocking up also the orifices of coronary arteries, so that they would scarcely admit a probe. Coronary arteries rather atheromatous, but not contracted. The heart's texture soft, rotten, and fatty. Fatty degeneration (microscope). A large deposit of fat on heart's surface. Lungs much congested; black blood. Kidneys, early stage of granular de-

generation. 'The microscope revealed spermatozoa on glans penis, and in urethra.'

Case XX.—A retired merehant, æt. 77. In May, 1856, I was first consulted by this gentleman, then 66, who remained faithfully under my direetions up to the day of his death in 1867. He consulted me first for ehronic diarrhœa, from which he had been a martyr for years, and which had resisted all kinds of treatment; also for supposed strieture of the reetum, which had been diagnosed by a surgeon but did not exist, a lump of hard internal piles having been taken for strieture; also for external piles, which were, at the time he eame to me, inflamed and exeoriated and the nates and perinæum the same from the abuse of eausties.

These troubles easily subsided when let alone, and the "strieture" soon got well, when not irritated by daily bougies. The diarrhœa I diagnosed to be a gouty eliminative discharge, and under constitutional treatment, with this view, it was soon regulated, and never troubled him during the eleven years that I attended him, execept when he got more than usually gouty in his general symptoms, and then it always yielded at once to alkalies and stomachies, preceeded by a dose of blue pill and blaek draught (than which no other aperient ever did him so much good and gave so much eomfort). He had never had, and up to his death did not have, regular gout; but often had gouty pains in his toes and fingers, and more espeeially in his thumbs, and without eare passed uric aeid in his urine. Never had rheumatie fever, but his mother's mother was gouty, and his only brother, (also a patient of mine) suffered, like himself, with gouty pains; and both of them had the ring-finger of the left hand firmly flexed upon the palm, by eontraetion and induration of faseia to the hardness almost of bone. Both also suffered from

Bronehitis in winter, and when affected with catarrh, and both had valvular disease, without the history of rheumatic fever.

When I first saw Mr. — in 1856, I noted, "Rather loud systolic bruit, loudest at apex, but audible at the base. Second sound not quite normal. Left lobe of liver hard and prominent."

He was a most regular and careful man, but very active, travelling frequently by rail, driving daily about London, and a fair walker; but always under my caution not to overtax the heart by ascents. His heart never gave him any uneasiness, and he was not aware that it was diseased till I told him of it, and of the need for caution, which he always observed with gratitude. Things went on much in this way. He felt his increasing age very little, and was with difficulty persuaded to resign some of his public appointments, in order to have more time for change of air, and especially for attending to his bronchial affection in winter. He lived in a tall house, in Regent's-park, slept up in a storey above the drawing-room, and lived principally on the ground-floor. He ascended the stairs quietly, in obedience to my orders, but felt no inconvenience to check him from more rapid ascent.

On June 4, 1867.—Having in other respects quite his usual health, he complained to me of a symptom which he himself thought of no consequence, imagining it to depend on cold in his jaw, but which my experience of other cases induced me to think very seriously of, as shown by my making the following note; for I had long ceased to keep any regular notes of his case, the symptoms being so much the same, and our interviews so frequent; the making of this note, therefore, was a marked sign of my concern. "He has a peculiar severe ache, not sharp, not gnawing, which comes on first in the lower jaw, then *goes down his windpipe* into

the chest, and spreads to the arms and down across the lower part of the chest, and then down into the abdomen. This lasts altogether about ten minutes, and then goes away of itself, whether he is walking or at rest. It comes when he is quite still, and also during exercise; there is no palpitation or giddiness. There is still the old standing rough mitral regurgitant bruit, and a systolic aortic bruit as for years past. The only new symptom is, that the heart occasionally intermits, which it never did before. Although he does not think so himself, I find from enquiry of his attendants, that the feeling in the throat comes on more frequently when going upstairs than at other times."

Additional precautions against ascents and over-fatigue were adopted, and quinine and strychnia taken, with advantage; but the symptoms of pain returned from time to time, till in December, 1867, he woke up early one morning with extreme prostration, great failure of the circulation, cold sweats, and signs of bronchial catarrh. Under strong stimulation he rallied remarkably, from a state which at first appeared like rapidly approaching death. But the power of the heart could not be kept up. He remained clearly conscious, took nourishment and stimulants freely, but died on the fourth day after being attacked, from steady failure of the circulation.

This case illustrates well the ominous import of pain in the larynx associated with heart disease. The character of the pain was well marked, and is fully described. It will be observed, that no apparent change had taken place in the physical signs during the eleven years the patient was under treatment; the occurrence of intermission in the pulse was the only new symptom accompanying the setting in of throat-pain. The second point worthy of remark is, the number of years that a patient may live with mitral and aortic valve-

disease, when carefully managed; and the absence of any special heart-symptoms to attract the patient's notice during the greater part of his life (see Aphorism V.). It was only during the last seven months of his life that he had any sensations to attract attention to his heart. The case is also a good illustration of a very large class of cases in which obstinate chronic diarrhoea, or tendency to looseness and irritability of the bowels, may be traced to the elimination of gouty matter by the intestines, and may be easily remedied by administering alkalies to neutralise the uric acid, and by general treatment for a gouty diathesis. At the same time it affords an example—especially when considered in conjunction with the brother's case—of the intimate interdependence between gout, bronchitis, heart, and artery disease; and the singular resemblance between the affections of the two brothers in their diseases, even extending to the contraction of the same finger of the same hand, is proof of the diathetic origin of the local complaints.

I may mention in passing, that the brother had, in addition to valvular disease, chronic bronchitis, contracted finger, and gouty joints, embolism of one femoral vein, left by an attack of phlebitis, with enormous dilatation of all the superficial veins on that side, by which the circulation was carried on. Yet with all this, he was a hard rider, and not a very cautious one in the hunting field. He was much shorter than his brother, and two years younger.

At this date, January, 1872, he is still alive and well, having passed through a severe attack of cerebral embolism and paraplegia, with a complete recovery from the paralysis.

Case XXI.—James G., 37. Winter cough three years. Invalided from the Baltic in 1856, for heart disease. Never had rheumatic fever or accident. His mother says he never had an illness, except typhoid fever. *Pain at heart on walking,*

and throat symptoms. If he goes slowly he can walk five miles, but the least hurry distresses. The distress begins as fluttering and fulness under left nipple, and rises up to the middle of the chest, without spreading laterally; rapidly *rises to the throat with sense of something rising up in the throat to choke*; no pain but choking. On pushing on, the sensation under nipple becomes a dreadful tearing pain, this becomes so bad that he is forced to stop. No giddiness during the pain. If he stops two or three minutes, he perfectly recovers; but on resuming exercise, symptoms come back more and more quickly and severely each time. During exercise, when not in pain, often turns giddy.

July 13. Physial signs.—First sound, sharp and clear, left and right of apex, ringing at elimax. Presystolic pause, clear. Close upon culmination of systolic sound begins a loud long diastolic bruit, heard from left apex across to right nipple, intensely loud at right apex and midsternum. Also a double softer bruit at base, loudest to right, and systolic bruit in both carotids. Complete rest; blister to cardiac region of sternum; 20 minim doses of tincture of digitalis three times a day; quinine, iron, and alkaline stomachic powders; greatly improved his condition, and relieved his tendency to pain; so that he was able to return to business in eight weeks, though still suffering from his complaints, and obliged to take great precautions against over-exerting the heart.

In this case, although the throat symptoms were marked, there was absence of *pain* in the throat, and the patient's improvement under treatment, notwithstanding his very serious organic disease, is an interesting coincidence; probably at a future stage of his complaint, when death had become more imminent, the warning of *pain* would be added to his throat symptoms.

Case XXII.—James G., æt. 38; Coachman. For twelve

months subject to cutting pains over the right nipple, also pain, like the pressure of a tightened hoop, round the chest, above the breasts, gradually *extending up the line of the trachea, with a constrictive choking feeling; at the larynx it divides and passes up each lower jaw*; sometimes, but very seldom, it extends up to the temples; during the pain he can hardly speak from the difficulty of opening the jaws, and feels very faint. The attack lasts about half an hour, and generally terminates when wind is expelled. It usually comes on about an hour after a meal, while sitting still, and is relieved by exercise; no palpitation accompanies the pain, but fast walking produces more breathlessness and palpitation than is normal; sometimes the pain comes between the scapulæ, and sometimes, but rarely, extends down to the stomach.

Had rheumatic fever thirty years ago, no illness since but the present.

Cardiac dulness normal, both sounds clear at right base. No bruit at apex, but distinct reduplication of second sound heard less and less distinctly up to base.

Jan. 6, 1869. Ordered effervescing citrate of potass and soda, with quinine, stomachic, and mild aperients, with diet for acid dyspepsia.

Jan. 13. The reduplication is to-day most distinct opposite left nipple, the second and third sounds of similar quality, the third the louder of the two; pain much relieved, none in trachea or jaws; the hooplike feeling is changed for a burning above each breast.

Jan. 27. Having had complete freedom from pain for some days, after eating a full meal of fish and potatoes pain began at the epigastrium and *rose up the trachea or œsophagus*, up the right side of the face to the temple; severe aching pain lasted about a minute, and then vanished suddenly, and was followed by headache. Except this attack, feels quite well, and has no pains; pulse very feeble and reluctant. Ordered soda, calumba, ginger, and saccharated carbonate of iron, before meals.

April 7. No return of pain, unless he is driving a very pulling horse, and this produces *pain in the jaws*; if he goes long without food he gets faint. Heart's sounds unaltered.

May 5. No return of pain.

Had the symptoms here described come on independently of food, either during rest or on taking exercise, they would have been of ominous import. But the indications that the neuralgia was of stomach origin, although complicated with defective innervation of heart, and the evidence that the heart was competent to a considerable degree when unembarrassed by the stomach, allowed room for a favourable prognosis, which was justified by the result. But the fact that, when all else was well, and independently of taking food, the strain of driving a pulling horse produced the pains in the jaws, showed that the heart might yet become a serious source of danger, and might easily take the lead in exciting the neuralgia.

I may mention here an important means of *distinguishing an obscure reduplicative sound from a murmur*, and at the same time a reliable test as to the good to be expected from tonics and stimulants. A bruit, as is well known, will be intensified and accelerated by exciting the heart to more forcible action; but a reduplication will generally disappear under such excitement, returning as the heart flags. Strong tonics and stimulants to the heart's action will, under these circumstances, usually restore the normal rhythm of the sounds. In the case above quoted, the test failed; and I conclude from this that there was permanent damage to the heart's tissue.

Aphorism IX.—If a reduplicated heart-sound temporarily disappears under the excitement of exercise, it may usually be permanently removed by restorative treatment.

Case XXIII.—Esther M., 41; widow. April 2.—Pain of aching character in the front of chest, through to right shoulder; constant when up, *not felt in bed*; worse after food. She avoids solid food in consequence. Aggravated by any exertion, when it runs down right arm and up *both sides of neck, accompanied with a choking feeling*, which is of the character of globus hystericus—not a constriction or neuralgia of trachea or larynx. Says she has been walking about the room all night, thinking she should die; and that repeated attacks have occurred, in which everybody who saw her thought she would die. Subject to cough.

Physical signs normal, except a loud anæmic bruit on pressure in the neck. Pulse same both sides.

Ordered a blue and compound rhubarb pill once; powder of soda calumba and ginger before meals; three grains of sulphate of iron with one of quinine three times a day; and a belladonna plaster to region of heart.

May 13. Has no pain or inconvenience left, except after food. After eating anything, except cocoa, porridge, or biscuit, weight and pain come at epigastrium; pain runs up chest some way, but she does not now have any uneasiness in the neck or throat. She has been without the stomachic powders.

May 20. Has had some distinct globus, associated with other unmistakeable hysterical symptoms; in other respects well: to go on with treatment another fortnight.

In this case, great danger existed of misinterpreting symptoms, and thus forming a far too serious prognosis. The difficulty was avoided by cautiously enquiring into the exact succession and association of symptoms, by which three series of events intimately associated could be defined.

- 1st. A stomach affection, giving rise to pain after food at the front of the chest, and through to the right shoulder.
- 2nd. An aggravation of this pain by exercise, and its exten-

sion to the arm and sides of the neck; but although this aggravation of the pain occurred during exercise, exercise did not produce pain, unless it were first set up by dyspepsia. Although, therefore, some heart embarrassment was thus indicated, it was evidently only sympathetic; and when anæmic symptoms (see p. 14) were found to be present, it was easily accounted for without necessitating organic disease. 3rd. The sensations in the throat; which proved to be only present when the patient became alarmed by the idea that the other symptoms were due to heart disease and placed her life in imminent peril; and in watching the ease the hysterical character of this symptom became clear by its association with unmistakable events.

The treatment was conducted on this view of the case. First, the dyspepsia was prescribed for. Secondly, the anæmic state was treated in conjunction with the dyspepsia; an attempt to treat the anæmia without this conjunction allowed the pain at the chest after food to return—but when the alkaline stomachic was given with the iron and quinine, all symptoms steadily cleared away. Thus a case which, if carelessly described as “pain at the chest, extending to the arms and throat, aggravated by exercise,” might have looked very ominous, was able to receive a cheerful prognosis, which did much to assist in curing its nervous element.

Case XXIV.—Charles L., æt. 46, jeweller, ill four months. Described his own case in writing, as follows:—

“Not quite four months ago I began to feel an *aching pain at the back of my neck* while sitting at work, not at any other time. It increased, and went to sometimes one shoulder, sometimes the other, and sometimes between the shoulders, often moving about during the space of one half-hour. Afterwards I had the pain in my arms, as low as the elbows. I could not sleep at night, but turned restlessly from side to

side. My general health the while was not so good as it had been. About two months since I noticed a *numbing* pain between my shoulders, and my chest began to be affected. When I walked fast I was broken-winded, and made a noise in breathing. The pains in the neck continued as before, also in the shoulders, and down my arms to my hands. My chest became very sore inside and out, sore to the touch. I was afraid to cough loud; I was so sore, it seemed as though I should tear something near the breast-bone. My breath was always worse while and after eating; I could swallow very well, but the food seemed to stick by the way, which caused the difficulty. This day three weeks, being worse, I did not go to work, but went to bed, and did not get up for three days, when the outside soreness was gone, and the pain in the shoulders nearly so (I had no pain at all in bed). Three days after this I first saw Dr. Dobell (October 14th, 1865), and have been getting better since (October 28th). The pains have left, except when I walk, which sometimes brings on the pain in the right shoulder, but not badly. The noise in my breathing has very nearly left, but I am still sore when I cough. I still can't sleep well at night, but much better than I did. I feel low and weak to what I did four or five months ago. I never had my chest affected before, and there is no chest disease in my family."

My own note was as follows:—Very short neck, veins on both sides and in front distended (not very much). Epigastrium, retracted during inspiration, cannot fill the chest well, and in the effort chest is drawn up *en masse*. Deglutition difficult *below* the pharynx. He does not choke, but after swallowing food cannot draw a full breath till he has washed down the food with water. Pupils both normal, conjunctivæ ditto. Lying on the right side brings on cough; he could not lie on the back a fortnight ago, it stopped his breath entirely, but

since taking five grains of iodide of potassium three times a day he can now lie on the back, but not so comfortably as on the left side. Coughing seems to relieve the chest, so does leaning the head and neck forwards (see description of the Heart-Bed, p. 15); but the convulsive cough produces pain down both arms to the elbows. Pulse in both wrists very small and feeble, but no distinct difference and no distinct thrill. At some distance from the patient a peculiar stridulous rhonchus is heard with both inspiration and expiration, much increased by throwing back the head and neck, nearly removed by leaning the head and chest forward. By auscultation the stridulous rhonchi are traced to the larynx, and just below the larynx, as points of greatest intensity, but there is harsh coarse breathing in both primary bronchi; and on the *right side* all the breath-sounds beyond the large bronchus are *feeble* as compared to the left, though audible. Respiration through right bronchus is decidedly defective and constrictive, but not nil. Cough, voice, and breath sounds all loud on left side. The harsh breathing heard in trachea is not conveyed to right apex. The expiratory stridulous rhonchus is jerked three or four times during each long expiration.

Heart's dulness ceases above across the sternum, opposite the third sterno-costal articulations; dulness recommences half an inch above this line, and extends all over the first bone of sternum and a little to the right of it. At apex both sounds of heart are normal; at the base both feeble, but audible; and in the distance, as it were behind the heart's sounds, a peculiar double (friction) sound is heard, like that produced by scratching gently with the nail upon smooth paper. It is very faint and difficult to identify, but to my ear is unquestionable. It corresponds in time with both sounds of the heart, but is clearly not part of them;

it is heard in the direction of the aorta, from the base of the heart upwards, and also through the back. Opposite this point it is like a distant friction.

Diagnosis.—Pressure on right bronchus and œsophagus probably from aneurism.

I was anxious to have the peculiar friction sound confirmed by some other observer, and sent the man to Dr. Richardson, at that time my senior colleague at the Royal Hospital, and I was surprised to find that he did not detect it, and, in fact, took a totally different view of the case from that I had formed; as shown by the following letter, written the next day, and which I give as an indication of the apparent obscurity of the symptoms:—

“Nov. 3rd, 1865. The case you sent me yesterday is of great interest. My view of it is, that at first the man suffered from fibrous inflammation and exudation in the cervical region, and that the cervical nerves, or their sheaths, were involved. The phrenic was included, and the rhomboideal branches of the cervical plexus. This caused the first severe pain between the shoulders and in the line of the mediastinum. In time, through the connections of the cervical nerves with the branches of the pneumogastric and the pulmonary plexus, there was irregular distribution of force through the organic pulmonary circulation, partial paralysis of the glottis, and innervation of the heart. The physical changes we have in the lungs are, I should hold on the above view, all secondary changes, in fact, of nutrition, and of the involuntary force in the arterial and bronchial muscular fibre. I have seen a case where the lumbar nerves have suffered in a similar way, and where the viscera of the abdomen were affected, as in this case are the viscera of the thorax. You should publish this case; they belong to a class of pathological changes little, if at all, understood.”

It so happened that the man discovered that Dr. Richardson and I took different views of his case, and that mine was a less hopeful one than that of Dr. Richardson, and a week or two afterwards he disappeared from my out-patient room, and I never heard of the man again till after his death; when, on enquiry at the hospital, I found that on Dec. 18th, 1865, he had transferred himself from my care to that of Dr. Richardson, where he had been treated till Feb. 26th, 1866.

I heard of his death through the politeness of Mr. Calthrop, who wrote to tell me that a patient who had formerly been under me at the hospital had died under his care, and that he proposed to make a post-mortem examination, and thought that I should like to be present, as he had learnt from the man, when dying, that Dr. Richardson and I had taken different views of the case.

Mr. Calthrop afterwards gave me the following account in writing:—"I saw Charles L. three days before he died. He presented a most peculiar spectacle. The upper half of his body being enormously distended, the face and chest particularly so, covered with veins, the corneæ bright red, the tongue and lips blue, and his whole appearance most characteristic of pressure on the superior cava. The breathing was very quick and superficial; the pulse not to be felt from the œdema; the cough most troublesome, and evidently depending upon the recurrent laryngeal being involved. There was very little *evidence of aneurism*. On auscultation, a slight *soft bruit* might be heard at the top of the sternum, and there was complete dulness over the superior half of the sternum, but *no bulging* or absorption of the bone. He was very faint and weak, could not lie down, and had, until lately, experienced great difficulty in swallowing; very little air entered the right lung, which was dull back and front. My diagnosis, which I wrote out before the post-mortem, was (as you will recollect)

'aneurism of the arch of the aorta, involving the superior vena cava and the recurrent laryngeal, and pressing backwards upon the right bronchus.' This turned out to be the exact state of things. The cause of death was bursting of the aneurism into the right pleura, which was half filled with blood, but the bleeding had been gradual and the rupture very small, fibrin in large quantities being deposited externally to the rupture, in different stages of development. The sac of the aneurism, too, showed the attempts of nature to cure the disease, it being nearly filled with fibrin deposited wherever there was a resistance to the force of the blood. The reason of so little bruit being heard was that the vessels came off from the top of the aneurism. The recurrent nerve was imbedded in the walls of the sac, and the superior cava was much diminished in size, and formed part of the walls of the aneurism. *The right bronchus was flattened and evidently pressed upon.*"

In conclusion, Mr. Calthrop said—"I have fully reported the case to the Islington Medical Society, amongst whose records it will be found."

Case XXV.—Feb. 1867. Charles B., 42. Night-clerk on a railway. Ill six years.

Cough and dyspnoea for twenty years in winter, better in summer; slight hæmoptysis occasionally; some pain at epigastrium after food, not severe. No dysphagia. Difficulty in lying down, from cough and oppressed breathing. *Peculiar croaking rhonchus of stridulous character in respiration, especially when neck is straightened, relieved by bending neck and head forward.* (See Case XXIV.) Palpitation for seven years. No difference in the two eyes.

Red complexion and hair, florid face, congested, but no enlarged veins.

The quality of the "croaking rhonchus" in this case, at

once reminded me of the case of Charles L. It was audible at a considerable distance from the patient in both instances.

Physical signs.—General chronic bronchitis, some encroachment of lung upon heart's space. Very harsh prolonged expiration, and croaking rhonchus with expiration in right bronchus, especially heard behind, affected by position, but not cleared by coughing; traced by stethoscope to right of sternum, about the bifurcation of trachea, as its *point of generation*; similar sound, but less marked, in left bronchus. A systolic bruit heard most intensely from the lower to the upper part of second rib, to right of sternum. Heard without pressure in right subclavian and carotid, not in left. Valvular sounds normal. Heart's dulness normal, except where lung encroaches. No dulness in region of bruit; no aneurismal swelling visible.

Two pulses different in form, equal in force, as shown by sphygmograph.

Diagnosed by me as innominate aneurism, involving aorta. Confirmed by Dr. Anstie, Mr. Christopher Heath, and Mr. Ernest Hart.

Rest; aperients; blister; and other treatment for bronchitis, with iodide potassium gr. iii. three times a day; relieved him so much that he could lie down, and his cough nearly left, in fact he thought himself well; but all important physical signs remained, including those of pressure on bronchus.

Mr. Heath and Mr. Hart would have operated by tying carotid and subclavian, but he would not have anything done, and left the hospital March 1st, 1867, having entered February 9th, 1867.

He soon returned as an out-patient, worse for work, and with fresh bronchial symptoms. Was again relieved by six weeks' treatment, and has not been heard of since.

Jan. 1872. Up to this date I have been unable to ascertain

the further course of this case. It is introduced here for comparison with Case XXIV. If the end should ever be learnt, it shall be mentioned in a future volume of this work.

Case XXVI.—William P., 36, shoemaker. Ill 14 months. April, 1868.

Pain in the front of chest, above right breast, spreading to sternum, and in the right back; with feeling of over distension ("over fulness") on drawing breath, in right side of chest, coming on fourteen months; also sense of beating in region of pain, aggravated by exercise; relieved by lying down half on right side, and *pressing against the back*; cannot lie on left side, cannot walk; his work, consisting of hammering with right arm, is very distressing. Slightly stridulous sound in breathing; dull anxious expression; veins of right side of neck somewhat distended, veins of right arm full and beaded; right side of chest in aortic region rather prominent, and looks tense; no external signs of removal of bone; the prominent region is tender, and gently but widely pulsating synchronously with heart. Face not turgid. Pupils equal, no vascularity of eye; complains of frequent live blood in eyelids, and of a faint feeling when he tries to use eyes. Pulse feeble on both sides, no difference detectable, no thrill. No hæmoptysis. No rheumatic fever. Four years ago had a pain through from heart to back, and was treated for it as a rheumatic pain, but had none in limbs or other parts; it got well. His wife says that in his sleep he has "attacks," which are evidently laryngeal spasm.

The character of the pains has been as follows:—In right back, aching, especially after exercise. In front, from above right breast to base of heart, aching. These aching pains were constant, but exercise soon brought on in the same region (front), a cutting "knife-like" pain; and a severe aching from the right shoulder down to fingers, getting worse and worse with continuance of exertion, until obliged to stop. Left arm never affected at all.

Physical signs.—Breathing slightly stridulous, most marked in inspiration, and heard most intensely in larynx (recurrent). The aortic region widely dull, extending down to right nipple, and up to clavicle; the whole of this region gently pulsating synchronously with heart. Both heart sounds clear at left apex; very obscure at base, especially the first sound. Obscure and blunt at all other parts, but heard throughout the right region and in the back. No bruit.

Lying on right arm, with something pressing on the back, is the easiest position.

April 28. Fifteen days in hospital, quite quiet, low diet. Digitalis, and iodide of potassium. Much relief to pain; but swelling increases forwards, pulsation increases.

May 1. Swelling increased, much sense of fulness. There is, to-day for the first time, slight systolic whiffing bruit in region of swelling, and the right pulse is sensibly less strong than left.

August 30, 1868. Visited him at his home; still much as before, except that swelling slowly increases, and all symptoms have become aggravated; breathing very stridulous. Bruit listened for, but not heard, but impulse of swelling was so strong as to confuse the ear with its concussion.

Gave him admission to Guy's Hospital, where he died, December 29, 1868. The record of the post-mortem was "aneurism of the ascending aorta of enormous size."

The signs and symptoms of extensive aortic aneurism were unmistakable. The description of the pain is carefully given and deserves note, principally in these respects,—1st. That four years ago there was "aching pain in the region of the heart, and through to the back," of rheumatic character, reminding us of the symptoms described in many of the slighter cases here related; like them it had been easily relieved by simple treatment; directed in this case with the false idea that the pain was rheumatic, but as this treatment

most likely included *Rest*, it answered the purpose ; yet there can be little doubt that this aching of the heart or of its large vessel was due to the early stage of those changes which had become fully developed on his admission to Hospital. It unhappily shows that we cannot be certain in similar cases, that because the *pain is removed by treatment*, therefore, it is independent of severe mischief ; and it may be a warning to keep an eye on such cases after they have been relieved, and to leave no means of investigation untried, when they apply to us, which can give any chance of discovering organic disease, should it unfortunately exist. (See Aphorisms III., IV., V.)

2nd. The relief to the pain, afforded by *pressure*, even when the disease was fully developed. Trousseau has pointed out the *relief of pain by pressure* as a sign that it is rather pleurodynia than Angina Pectoris ; but in the present case we see pain due to a most serious organic disease markedly relieved by pressure : it will not do therefore, to depend upon such a distinction.

3rd. A marked point in this pain is its restriction to the right side, and the *persistence* of the “ *dull aching pain*,” and the development of the *short cutting pain*, in the same region, under *exercise*. This will be found to have occurred in numerous cases in which these two classes of pain are described. See p. 14, “Varieties of Pain accompanying Affections of the Heart.”

Case XXVII.—Nov. 1, 1864. James W., 27, estate agent, married, his mother died last March of old standing heart disease (mitral) and paralysis. (See Case XXVIII.) Mr. W. began when quite a boy to preach and deliver lectures on temperance, &c., and was thought to be a genius, has nearly relinquished these pursuits, and having a fair income independent of business, does not take much interest in the latter. He is therefore without regular employment.

Heart's transverse dulness level of nipple, two inches and three-quarters carefully percussed; sounds rather blunt and faint; rhythm easily disturbed, no intermission. Pulse 62, small and deficient in power, the same on both sides. General appearance of fair health, not anæmie, not over fat, but a little disposed to plumpness. Lives very carefully, and thinks a great deal too much about diet, and is inclined to "fads."

Nov. 1, 1864. He brought the following details of his sufferings, written out:—

"Irritation increased by food. Aching is relieved by exercise, irritation continues. Heart throbs during irritation, and is very feeble after. Heart feeble after prolonged exercise. Aching increased by anxiety, disappointment, or anything that would ordinarily put one out.

"Irritation at the heart (itching and tingling feeling) gradually increasing, accompanied with a sensation as though the region of the heart were filling with fluid (oozing feeling); changes to a dull, aching feeling right through to the back of the shoulder. The aching sometimes removes into the chest with fulness and choking feeling. When the chest aches the heart is relieved, but feels as if it were bruised. Commences soon after waking in the morning, and continues more or less all day.

"This violent irritation is felt chiefly about half-an-hour after food, especially dinner.

"Peculiar sensation commencing in the centre of the stomach like the feeling of swollen inflamed tissues round a boil that wants to burst, as though the veins, &c., were inflated with irritating gas. Sensations increasing until the whole body is powerfully irritated, something as though a galvanic battery were inside the stomach. When this violent irritation is on, the heart

“ This violent irritation is felt chiefly about half-an-hour after food, especially dinner.

throbs very much (slowly). When the irritation subsides heart is very feeble, feels as if it had been bruised. Also a bruised painful feeling in the back of each breast and lower down, and a feeling, *like pins and needles*, especially in both arms. If the irritation is unusually powerful, when it subsides the heart shudders for some minutes. Weight in chest and intense thirst a short time after food. Bruised feeling if the stomach is pressed. Acid and bitter risings (liquid). Food sometimes rises four hours after taking it, and is undigested and sweet (this is not often). It eructates without sickness.

“ Nervous fears; afraid to go any distance from home; don't like to be left alone; symptoms alarm me, fears increased by reflecting on them; sudden changes from joy to grief—sometimes prolonged grief.”

His wife, a business-like sort of woman, considered that this was “ stuff, and that if he would exert himself, and not mope over his feelings, he would be half well ”; still she said he was certainly very uncomfortable and miserable, and that he could not enter into any pleasures; he dared not go about without her, lest he should be taken faint.

I found that he smoked too much, and wanted occupation. Symptoms of acid dyspepsia were also plain. Ordered powder of soda calumba and ginger before meals, to avoid smoking, get change of scene, and take to horse-riding, and when at home to carpentering or turning.

He had already consulted various doctors, and tried all sorts of remedies; being generally told there was "nothing the matter with him."

He got considerably better, after following my orders.

He consulted me now and then for some of his sensations, but I never could make more of them than acid dyspepsia, and extreme nervous sensibility, aggravated by having seen his mother's sufferings (Case XXVIII.), and lost interest in the pursuits of life. Treatment with this view always gave relief, so long as it was carried out.

June 21, 1865. After long absence, during which he had travelled a little, and tried Matlock baths, &c., he brought the following account:—

"Increased by exertion.

"*General Symptoms.*—June 21st, 1865.—Continuous pain in centre of breast, with fulness and congested feeling over *chest and throat, as if about to suffocate*. Numbness in lips. Tightness in calves and insteps, and pricking sensation as if legs were encased in new woollen stockings—sometimes in fingers also. Pain across insteps occasionally.

"Throbbing heart, and purring sound with every beat. Heart intermittent after extraordinary exertion or excitement.

"Putrid taste, and raw taste in mouth, with feeling as if an ulcer had broken in breast. All day, on and off, acidity in stomach, after all kinds of food. Various noises in chest, like distant falling waters. Great weakness. Emaciation; in-

ability to take much exercise. Nervousness. Feeling as if something awful were about to happen to me, cannot bear to be alone, with other nervous symptoms.

“Tongue dry and blistered at back; soreness in throat. Flushing of face, especially left side of face.

“Fidgetiness and restlessness for some time prior to an attack.

“*Special symptoms*, occurring occasionally:—Gradual feeling of faintness, violent agitations, particularly internally; hurried breathing, as if frightened; feeling as if losing consciousness. Pulse gets weaker and weaker, circulation appears to cease; sensation as if something pressed upon heart. Choking sensation. Attacks last about half an hour, and leave me very weak and ill for several days, and unable to go out alone, or attend to anything.

“Swimming in head, with fulness at back of head. Shudders, as if water was suddenly thrown on spine.

“*Motions* contain mucus and slime, colour natural.

“*Urine* occasionally has a pink or violet deposit.”

I told him very clearly my opinion of his case, and prescribed again with that view, also ordering valerianate of zinc and belladonna, to be taken when the alkaline stomache had relieved the dyspeptic symptoms. After this his father died, and left him considerable trouble as executor in settling

the property, most of which came to himself. This occupied him very much, and at first oppressed him, but afterwards evidently did him good. He had become a bore to me, and I let him see it, so that I heard very little of him from this time.

Dec. 5, 1866.—He came to me to report himself—very much better in all respects. He was still full of accounts of uncomfortable sensations, but his heart-aching was well, and he said that he had now “no trouble with it.” He had taken to a country life.

Case XXVIII.—Mrs. W., 60, Oct. 22, 1863, mother of James W., *Case XXVII.* Had rheumatic fever thirty years ago, and also slightly when a child. Active, temperate. I have attended her for the last thirteen years for occasional attacks of palpitation, and for severe bilious attacks with head-ache and vomiting of bile. I have always heard a loud mitral systolic bruit—very loud and very long; and I was told that she had this bruit when first consulted, thirteen years ago.

Last December (1862) she had rheumatic fever severely, and was under my care. The heart was closely watched, and endo-cordial inflammation was several times threatened, but alkaline saturation and blisters avoided any serious heart complication. The marked symptom throughout was extreme depression, best relieved by quinine, which was given freely throughout with the alkalies. She recovered well, and has been well for months. Has lately returned from Eastbourne, where she says she walked seven miles a day, up hill and down, without inconvenience. Since her return has had some mental worry, and has been much up and down stairs. Has now great shortness and quickness of breathing, much exhaustion, and violent palpitation, with short cough, disturbed sleep, and apprehension of rapidly approaching dissolution.

Heart sounds sharp and flapping, action irregular, but *not a vestige of the old mitral bruit can be heard*; no aortic bruit.

Pulse irregular, sharp, no power.

Oct. 25.—Has kept quiet three days; taken iron, quinine, and digitalis. Is very much better in every respect; walked to my house (about three miles) comfortably. No bruit audible; says the heart feels “much smaller” than on last visit.

Nov. 11.—Going on well; a faint bruit is to-day just discoverable at end of first sound at apex.

Nov. 30.—Called in hot haste at 9.30 p.m. to Mrs. W., and found that she had been taken ill at 4. Her family doctor had remained with her, but she had got worse and worse. When I saw her she was suffering from the most appalling respiratory distress; heart beating frightfully hard and fast; pulse very feeble; hands cold and bedewed with perspiration; eyes excited with apprehension of approaching death; lips not blue, but purple-red; fine-vessels of face turgid; abdomen hard, resonant, very slight stifled cough, occasionally; no pain, but apprehension that every breath would be her last. Inspiration not accompanied by croup, but rather wheezing. Patient tossing from side to side, then forward, then back; nothing would persuade her she was not rapidly dying. No assignable cause for attack: she had been for several days “taking care of herself,” because of severe weather, living in two rooms on same floor; had eaten moderately of wholesome food; bowels open several times fairly; had not had any excitement; had only felt rather oppressed in stomach and bowels.

Auscultation discovered very little—viz., violent palpitation, with occasional intermissions of a beat; the old mitral systolic bruit was distinctly heard, as it had not been since her last rheumatic fever. No new sound discoverable. Respiratory sounds feeble and hurried, a wheeze accompanying

both inspiration and expiration ; urine scanty. (Pulmonary Embolism ?)

Mustard poultices and stimulants had been used with no relief. Thinking that emptying the stomach and bowels would let down the diaphragm, and so give some relief, ordered pulv. rhei. ℥j., sodæ. tart., ʒi., pulv. jalapæ, gr. x., sp. æth. m. xxx. ; no relief in half-an-hour. Then gave valerian, ether, ginger and peppermint in hot water. This expelled flatus by mouth, and with each expulsion there was evident relief, but patient was becoming exhausted, and danger of death still seemed urgent ; dose repeated occasionally. In three hours from my first seeing her, breathing began to get deeper and slower, and heart more tranquil ; she expressed relief and a wish to dose. I left her well propped up, and to repeat medicine if awake.

In the morning I got a message that she was still mending, and I saw her at 1 p.m. All apprehension of death had passed ; breathing was still wheezing, but there was freer cough ; palpitation had ceased, but heart and pulse still agitated and occasionally intermittent. Mitral bruit continued loud, as in former times. Digitalis, bark, light nourishment, and perfect quiet.

Next day she was so much better that she laughed while I was with her.

I learned from her family doctor that she had no recurrence of the above attack, but went on about as formerly.

In March, 1864, she was seized with hemiplegia without any apoplectic fit ; power of speech was entirely lost. She never left her room again, and gradually sank, after lingering some time. (Cerebral Embolism ?).

Case XXIX.—John D., æt. 33. Nov. 19, 1866. Cellarman to a wine merchant, and oilman on his own account. Has very little to do with paint or white lead, as the oil business is managed by his wife.

There is a very faint line, as of lead, round two teeth—not unquestionable.

His father accompanied him and said that in spite of his occupation, he was an extremely temperate, careful liver, and very industrious, disposed to be too anxious about business.

He was strong and hearty till he took oil of male fern week after week for a long time, under the idea that he had tape-worm, five years ago. Ever since he has suffered from nervousness and pains which have been called *angina pectoris* by doctors who have seen him during the attacks. He has got worse and worse till he is now quite incapacitated for business, "faints" with the slightest thing. The least exertion or excitement "puts him in a pant with his breath." Has no appetite, is very anxious and low-spirited. Has been at Victoria Park Hospital, London Hospital, and has had some of the physicians to see him at home. Some doctors having lately told him that he has "water at the back of the heart and must die in one of his attacks of angina" he has been made worse than before.

Voice very weak and whining; no Laryngeal disease detectable by laryngoscope. No abnormal lung sound. Heart's space normal, sounds feeble, but no bruit.

I cheered him with a favourable opinion; ordered daily short walks, rest of mind, change of scene, no business, and some stomachic tonics, with iron and strychnine and valerianate of zinc.

Nov. 23.—Better, pulse 96, firmer, still very little power; heart's sounds firmer, better heard, impulse better. Urine brought for analysis clear, acid, no albumen, no sugar.

Nov. 27. Can now walk a quarter of a mile without pain. Breath much hurried and faintness produced, by my making him jump up and down six times and beat his arms about. Complains that his legs are very weak. To go on with treatment. Voice still weak, but varies a good deal.

Dec. 7. Careful measurement of heart—has been walking and says the whole of left side about the heart *feels as though it were swollen and would burst*, and the left arm

numb— $3\frac{1}{2}$ inches transverse dulness at level of sixth costal cartilage from midsternum to below nipple; sounds slightly flapping, but otherwise not abnormal. Pulse 64, moderate volume and firmness while sitting; pulse is easily affected by rising.

Has had an attack of pleurodyny in left side, but no attack of the angina-like pain since last visit. Walked from Regent Circus to Harley Street to-day with pleasure. Mucous membranes still anæmic. He does not go out of town as directed, but takes exercise in Victoria Park. He is too timid to leave home.

Jan. 25, 1867.—Having heard no more of him since December 7, 1866, I wrote to ask for a report. He answered, "I have improved greatly in strength. I still have pain over the heart, more so when the weather changes, as yesterday. Last week, the weather being fine and dry, I was remarkably well and free from pain, excepting a convulsive movement of the muscles when I laid down. I have not taken any medicine this month; my voice comes and goes."

Feb. 5, 1867.—He called; said that during the severe frost, he regained his voice and felt perfectly well; could walk any distance without pain, the only inconvenience being "a sort of rubbing feeling" over the heart on lying down at night. He felt the cold very much, especially in hands and feet, and still complains that left arm and hand get numb during sleep. When the thaw came he broke down, but the old feeling of "swelling at the heart" did not return. The weather is now fresher and he feels well again.

Heart's transverse dulness, $3\frac{1}{2}$ inches, as before, no bruit; action regular 64 sitting; sounds want sharp definition, but are clear and normal in other respects.

General health much improved, but still below par.

Ordered to go on with plan of treatment.

The fact that so many medical men had been deluded into giving unnecessarily alarming opinions and prognoses must,

I suppose, justify the terms "obscure and puzzling," which I found had been generally applied to this case. But I confess that a careful investigation of its symptoms impressed me, on the patient's first visit, with the conviction that the case was one which would recover under judicious treatment.

It is not the first case in which I have seen serious and anomalous nervous symptoms attributed by patients to foolishly repeated doses of male fern.

In this case the quantity taken had been very considerable, and spread over a long period. I could not get an exact estimate of the quantity. The patient and his father were both very strong in their belief that the drug had done all the mischief. There was, however, the suspicion of Saturnine poisoning, from his trade as an oilman, which brought him occasionally into contact with white lead; but beyond the questionable line on the gums of two teeth, he had no special signs of lead-poisoning; that is to say, he had neither colic, nor paralysis, nor nephralgia.

His marked and steady improvement under the treatment ordered, when *conjoined with a reassuring opinion* of his case—the restoration of voice and great benefit to general symptoms during clear frosty weather—all combine to support the opinion that—whether from the effects of lead, of the male fern, or, as I think most probable, from over-anxiety and over-tax of body and mind in conducting a business of his own, and following the calling of a cellarman besides, with the necessary confinement to an unhealthy atmosphere, first in cellars, then in his own shop—the disease consisted in defective blood, defective nutrition, and consequent nervous and physical debility, aggravated and determined into its peculiar character by the alarm caused by the idea of poisoning by the male fern, and by the ominous words "angina pectoris," which had been unluckily given to his symptoms, and which

he had carefully looked out in dictionaries and other works of reference.

March 12, 1871.—Although never quite losing the feeling about the heart, he says that he has been in “capital condition” till a month ago. Three months ago was subjected to great and sudden emotion by saving the life of a man on a railway, and he did not appear to suffer at all from this. It certainly did not affect his heart. One month ago his child had scarlet fever badly, and he sat up and nursed it. He did not get the fever himself, but had sore throat and some swelling of glands, and his voice became weak and squeaking. One week ago he took a morphia mixture (not by my orders), which relieved the heart, but ever since he has been almost unable to express himself, in consequence of severe stuttering. It is typical stuttering, not aphonia or aphasia. He speaks rapidly in a jerk for a sentence or two, and then stutters for a long time before he can again command his words. The left hand, arm, and leg “die frequently, and he feels numb and cold all over.” The lips and nose frequently get very cold. Heart sounds as before; pulse feeble and slow. A strong Faradic current from occiput to larynx produced faintness, but did not improve power of speech. He looks pale and depressed. He says—and I find it true—that if he speaks in a whisper there is no stuttering. It is only in trying to raise the voice that he stutters, and this effort produces pain at the heart. Ordered rum and milk, valerianate of zine, quinine, and ext. of belladonna.

March 16.—He is certainly better. I find that on taking a very deep inspiration, pulse completely stops at wrist, and does not return till expiration begins, the heart the while tumbling about without rhythm and with pain under the nipple. When lying on back, stomach resonance, extends normally upwards; but when erect, there is dulness for four inches below epigastrium and level of ribs. No epigastric pulsation. Heart-sounds feeble; no other sign. Urine

normal. Ordered larger doses of iron, quinine, and nux vomica.

March 18.—Marvellous improvement. Eats well, walks daily. He speaks steadily with normal voice, except now and then, when he suddenly stutters for a sentence. Pulse regular, firmer, and fuller. First sound of heart much stronger, accentuated almost like second sound; second sound feeble. Says he holds up well till about four p.m. and then begins to go back, and if he does not lie down and rest stuttering and pain at the heart return. Ordered to continue three grains of sulphate of iron and one of quinine with ten minims of tinct. of nux vomica, three times a day.

In the four following Cases (XXX. to XXXIII.) the rapidity and completeness of the cure in Cases XXX., XXXI., XXXII., confirmed the evidence of the physical signs, that the throat symptoms were not due to organic disease of the heart; while in Case XXXIII. the incompleteness of the cure showed that the integrity of the heart was seriously impaired, although the throat pain was probably only accidental and symptomatic of the stomach affection.

Case XXX.—Susan S., 29, married, nursing a baby six months old, is very weak.

Pain begins under left blade-bone, extends to right, and runs round along the ribs under the right breast, runs right up the breast-bone and into the larynx, with a sense of something grasping the throat and windpipe. Does not affect deglutition or speaking. Walking brings it on; lying down brings it on; and so does wind in the stomach. When produced by walking, stopping removes it; when produced by lying down, getting up removes it.

Had similar symptoms once before, and was cured at the Royal Chest Hospital. Had rheumatic fever when a child, and last week had rheumatic pains in the wrists and knees.

Heart and lung-sounds normal. Ordered—generous diet, soda, calumba, ginger, and saccharated carbonate of iron. Belladonna liniment to the painful parts, and rest. At the end of three weeks every symptom was removed, and she carried her own child to the hospital without exciting any pain or distress.

Case XXXI.—Robert C., 43, chronometer-maker. Ill two months.

Pain across the front of chest and between the shoulders constant, but worse after eating. A constant “suffocating feeling in the windpipe.” For some time past has trembled very much when taking walking exercise, but walking does not bring on the pain. Urine thick and dark. Appetite bad; bowels confined. Tongue flabby, red at tip; pulse average. Never had rheumatic fever. Physical signs normal. Ordered—effervescent citrate of potash and soda; pills of iron, quinine, and aloes; liniment of turpentine and ammonia.

End of first week. Has nearly lost pain in chest and suffocating feeling in throat. Urine clearer.

Continue medicines, with addition of calumba and ginger.

End of second week. No pain now, even after eating, but still feels trembling on exertion. Urine quite normal.

Fourth week. Discharged quite well.

Case XXXII.—April 3rd, 1867.—Mary Anne B., 33, married. Ill eight months.

Almost constantly “a stuffy pain about the heart.” Extreme palpitation on the least excitement; not produced by walking. Not subject to hysterics. The heart is almost always in a flutter, occasionally gives a sudden start, and then palpitation becomes severe. Cannot bear pressure on the left side of chest, or even on left shoulder. Dreadful feeling of “gnawing in the throat,” and sometimes a “choking feeling” not affecting swallowing. After severe palpitation, and when fatigued, severe aching pain in the left upper arm, lasting

about an hour. (See Aphorism I. p. 24.) Always worse at menstrual period. No hereditary or constitutional disease.

Physical Signs.—No bruit, peculiar rhythm, and occasional intermission.

Ordered—Powder of soda, ginger, and calumba, before meals, and ten grains of bromide of potassium every night.

April 17. Discharged well in all respects.

Case XXXIII.—Henry W., 40. Ill seven years, Oct. 1, 1866.

Pain under the left breast, extending through to the back, under left blade-bone. Pain is dull and heavy. Brought on by running up-stairs, and all excitement. After eating has oppression at epigastrium and *up the throat*. Legs feel heavy and useless (not paralysed); some rheumatic pain in legs. No hereditary disease. Never had rheumatic fever.

Physical Signs.—Heart-sounds feeble and slow, otherwise normal. Heart's resonance normal. Pulse, like heart, feeble and slow.

Ordered—Eff. citrate of soda and potass. Mixture of sulphate and carbonate of magnesia, iodide of potassium, and nitrous ether, and rest.

After the above treatment for one week, all pain has gone while he rests, except a cutting pain (new) on inspiration to right of sternum. No fresh physical signs.

Continue effervescing mixture, and take powder of soda, potass, calumba, and ginger, before food.

End of second week, all pain now reduced to a settled dull ache. Feels better in all respects.

Continue powder, and take pill of iron, quinine, and aloes.

End of fourth week, so much better as to go to work; but soon returned worse. Blister and continue treatment.

Dec. 1. Two months after admission. Pain has nearly all gone, but not quite; legs feel better. Says blisters relieve the pain the most.

The following Cases (XXXIV. to XLVIII.), further illustrate varieties of pain at the heart, or in its neighbourhood:—

Case XXXIV.—Caroline S., 30, married. Ill six years, February 4, 1865.

Constant dull heavy pain in the region of the apex of heart shooting up to the right. Walking and going up-stairs make it worse, so that she is obliged to stop. The least exertion produces faintness. Feels full after food. Breath is very short. Cannot lie down on account of cough when at the worst, but this varies. Rheumatic pain in the shoulders. Urine apt to be red and thick. When the shooting pain occurs in the heart she sometimes spits a little blood. Nose bleeds a little. No hereditary disease. Had rheumatic fever ten years ago. Has spat blood about once a year, generally in autumn, for four or five years—florid blood coming up rapidly, about a tea-spoonful at a time.

Physical Signs.—Rhonchus and sibilus throughout chest. Resonance normal. Impulse felt low down. Both sounds clear to the level of fifth rib; from that point downwards is heard a rough bruit, which distinctly precedes the impulse, but passes gradually into a short sharp first sound, quite clear of bruit, which is synchronous with culmination of impulse. The bruit is accompanied by a running thrill, perceptible to palpation. Second sound sharp, and clear of bruit.

This examination was confirmed by a second, made with great care. The sound was very peculiar, difficult at first to distinguish from a long diastolic bruit. It was then thought to be pre-systolic, but ascertained not to be. The rationale appeared to be that the valve (mitral) admitted of regurgitation and bruit up to the moment of systolic culmination, and then closed completely; or else that by that time the

ventricle had become empty, and thus no regurgitation could take place.

Ordered—Blister; and pill of ipeecacuanha, henbane, hemlock, and compound squill pill, for bronchitis.

Feb. 11. Continue pill and add effervescing citrate of potass and soda.

March 4. Blister to right side.

March 18. Tinet. digit. ℥xx., with sulphate of iron and quinine.

April 1. Effervescing citrates repeated, morphia and liquorice lozenges.

The pain left the apex of heart and moved to the centre of the sternum. Cough and general symptoms were relieved; but some blood continued to be spat at intervals, and the pain did not leave the sternum.

Case XXXV.—George H., 51, missionary. Ill six months. —Jan. 28, 1865.

Peculiar feeling of “dull waving pain up and down left side,” from two inches above to two inches below left nipple, and also at the same time the same feeling in the back, under the vertebral border of scapula. This pain is not always present, but he generally has it one or more times every day. Cannot say that anything he knows of makes it worse, or brings it on. Also has pain in the epigastrium, of heavy character, which he thinks is sometimes worse after food. Twenty-five years ago used to be subject to palpitation, but not since.

Sometimes feels swimmy when he turns round; once or twice a week is a little sick. Bowels regular. Perspires too much at night. Looks pale and earthy. Pulse 90, feeble; same on both sides. Urine generally very thick, with deposit of urates, acid, no albumen. Flesh flabby; is rather fat, but getting thinner.

No hereditary disease. No rheumatism or gout ; has had considerable mental distress lately.

Says he was a patient under me four years ago, with "throat-cough and feeble heart." Has suffered from Eczema.

Physical Signs.—Heart's dulness correct ; impulse moderate, rather jerking ; first sound jerking ; second weak, otherwise normal. No morbid lung-sounds, no anæmic bruit.

Ordered—Effervescing citrate of soda and potass, with pill of iron, quinine and aloes.

Feb. 18. All symptoms gone. To take powders of soda, ginger and calumba.

March 18. All chest symptoms gone, except occasional palpitation from family troubles. Urine clear ; appetite good.

Case XXXVI.—Thomas A., 25. Ill two months. April, 1865.

Subject to pain in the heart three years, but worse two months. The pain, he says, is like "a wasp sting" under the left breast, repeated every minute or two all day long, but worse after exertion. Sleep disturbed by pain, though it (the pain) is better by night than day. Body starts in sleep and wakes him. Always coughs on rising up in bed. Pain is much worse after severe exertion, obliging him to sit down for a quarter of an hour. Breath short on exertion ; urine high coloured.

Two years ago spat blood, little by little, for twenty-four hours. Had rheumatic fever ten years ago. Subject to acid dyspepsia. Drinks beer freely (too freely.)

Physical Signs.—Long loud systolic bruit at apex, occupying whole of first sound ; second sound clear ; transverse dulness normal.

Diet for acid dyspepsia ; five grains of compound rhubarb, and five of blue pill ; effervescing citrate of potass and soda.

End of first week.—Pains much better, palpitation worse, cough bad. Has left off his beer, but has not taken, as ordered, an equivalent quantity of whiskey.

Add quinine and digitalis to medicine; powder of soda calumba and ginger before meals. Apply belladonna plaster to heart. Take whiskey and water.

Third week.—No pain ; still has palpitation ; otherwise well. Physical signs stationary.

Case XXXVII.—George M., 54, beerhouse-keeper. Ill fourteen years. Sept. 1866.

Pain in the lower part of the sternum. Commences soon after beginning to walk, then extends to between the blade bones, and then up the chest into both shoulders, but worse in the right than left ; then down both arms, producing numbness. If he continues to walk in spite of pain, *it goes down both legs*. Sitting down for five minutes removes all pain. Once or twice has turned giddy when free from pain. Not giddy when in pain. Subject to bilious attacks, and rheumatic pains in the limbs. Urine high coloured.

Never had rheumatic fever or other severe illness. No gout in the family.

Physical Signs.—Sounds feeble and slow. First sound faint. After jumping several times, heart's action much agitated and tumbling. No bruit developed.

Ordered—Soda, potass, calumba and ginger powder, iron, quinine, and alocs. Only seen once.

Case XXXVIII.—Emily W., 29, married. Ill two months.

Pain of aching and burning character, extending from a little to left of sternum, below the level of nipple, to the axilla on left side and left blade-bone ; also, in the same region, a pricking pain. The pain began in the left axillary region two months ago, and has gradually spread forward and backward. Some amount of pain is always present, but exercise aggravates it and produces palpitation. No increase of pain from food, but the appetite is unnaturally craving. She thinks left arm shrinks and loses power. No shrinking perceptible. Functions all regular. Breath foul. Mother

died of consumption. No other hereditary disease. No rheumatism or other illness.

Physical Signs.—Heart-sounds sharp and clear. Pulse sharp; both sides alike. Lungs normal.

Powder of soda, calumba and ginger; pill of iron, quinine, and aloes, belladonna plaster.

At eighth week discharged much better. No pain now unless she is fatigued, then pain and palpitation return. No shrinking of arm. She thought the plaster relieved pain.

Case XXXIX.—Catherine C., 46, married. Sept. 17, 1864. Rather fat, pale and flabby. Four years ago began to suffer from present symptoms, but they have gradually got worse, and especially during eight months. On taking food, suffers directly from pain in the epigastrium. This has been the case for many years, but now, and for four years increasing. Of late has pain under the left breast and through to the back on the left side, and extending over the right of median line in front of chest when she walks, stoops, or turns in bed. This set of symptoms is often brought on at night by turning in bed, and when it occurs she feels "as though everything had stopped." Breath seems stopped. Has a distressing fulness at chest, like cramp, which makes her wish to tear open front of chest and relieve it. No flatulence will move. At times she can walk, stoop, or turn in bed without these symptoms, but not usually. Turns cold, damp and faint during the attack. Habits sedentary.

Four months ago menstruation, formerly regular, stopped suddenly, and she has been worse since. Never had sand or sediment in urine. Bowels regular. Appetite bad; sleep bad. Pulse rather feeble. Heart's first sound rather faint; second sound, sharp. No bruit. Impulse fair. Action regular. Occasionally disposed to stumble a little in beat. Cardiac dulness normal. She eats cheese, and drinks a little beer.

Ordered—No beer, no cheese. Powder of soda, potass, calumba, and ginger; pills of iron, quinine, and aloes.

Oct. 8. Much better. Heart-sounds nearly normal. Has only had three attacks in fourteen days. Continue treatment.

Oct. 22. From account to-day of an attack of pain with sickness, followed by jaundice (not like usual attacks), has evidently passed a gall-stone. (See Case xvi.)

Nov. 5. Has menstruated slightly, first time for five months. Feels almost well. Has no pain. Heart does not stumble.

Case XL.—M. S., 52, Italian by birth, artist in ivory.

Has followed his art since childhood. It requires nine to ten hours a day, sitting with the left side fixed by resting left arm on a bench, to give concentration and force to the right arm with which the carving is done. By the long continuance of this, the left side of chest, including the cardiac region, is bent in considerably.

Nov. 21, 1867.—Consulted me for sensations described below. A very intelligent, industrious man; very temperate; has amassed some money by hard work. Bowels always costive. Urine acid, clear, normal. Heart's sounds and dulness normal; liver rather low; stomach protuberant, tender, tympanitic; pulse normal, lungs normal.

He complains that after sitting at his bench about half-an-hour, a sensation of extreme faintness *creeps* across the epigastrium, extending by degrees over the whole region of the stomach proper, and over the cardiac space below the nipple. Never gets beyond this; never gets up the front of chest. The same queer sensation is felt in the back opposite the region of inconvenience in front; spreads up and down the back some ten inches, never more; very seldom it produces a little giddiness. Once a pain spread to the sacrum, but only once. All these sensations go on, getting more severe if he continues at the bench, till he cannot sit longer for fear of fainting. On getting up and

moving about they go off gradually, but it takes two or three hours; and of late they have lasted all day, and even prevented sleep. He is thus quite ineapacitated for work. Ordered some gymnastic exereises. No eheese, no beer. Powder of soda, potass, ealumba, and ginger; eompound rhubarb pill, with ext. of nox vomica.

Nov. 27. Very much relieved; says, in broken English, "that medieine suits me fine; I ean eat like a wolf." Urine still acid, pale, and clear. A day or two afterwards brought me an ivory carving, done by himself, as a proof that he had got back to work, and a sign of gratitude for "his eure."

March 24, 1868.—Reports that by following my advice he has kept to work, and has no return of former sensations, but now has a *pain* aecross the lower part of the chest, on drawing his breath, or gaping; also a dragging pain in the back and loins; tells me that he is married to a wife nine years younger than himself, and that he has gone to exeess habitually, and has long felt it try him. He believes that his present symptoms come from this eause, as he is always better if a few days away from home. Ordered eold frietion baths, tonies, and cod liver oil, with moderation in his habits, and he soon got well.

Case XLI.—April 8, 1865.—Rachel D., married. Ill four months, with weakness and feeling of heaviness.

Pain at epigastrium, and under left breast, up the left side, and through shoulder, down left arm. The pain is aching, and in the arm aecompanied by numbness; sometimes it *comes in the leg, and then she always feels cold.*

Never had ague, or lived in ague distriet. No gout in family; no rheumatism. Menorrhagia, palpitation at night. The pain is eonstant, but gets worse sometimes, and then she nearly loses use of arm. Always much worse after food, espeeially after beer. Urine frequently high-coloured. Troublesome eough sometimes, streaks of blood in sputa; some pain in chest on inspiration.

Physical Signs.—Heart sounds short and flapping. Right upper chest less resonant than left. Expiration prolonged. Upper back corresponds; voc. resonance, plus. Harsh breathing both sides. On left divided. Some dryish crepitation left upper front, near sternum.

Effervescing quinine mixture, iron and quinine pills.

April 15.—Powder of soda, potass and calumba; cod-liver oil.

May 13. No pain now, but has menorrhagia, and is very weak.

Case XLII.—William H. P., 39, milkman. Ill two years. March, 1865.

Constant aching pain from epigastrium, all over the cardiac region, up the left side, to shoulder. At night the pain gets between the blade-bones, and in that region is darting. The pain in front is worse during inspiration; sometimes a cutting, “knife-like pain” comes in same region, but that is only when there is wind in stomach. Eating does not affect the pain; sleep is disturbed by it of late. No numbness in either arm, or loss of power. Last three weeks giddy occasionally, but never faint. Breath not short, except when pain is bad. Feels the pain especially when hurrying with milk-yokes on. The history of this pain is that two years ago, from no apparent cause, exercise (carrying yokes especially) first brought on a sharp, “knife-like pain” from under ensiform, right up left side under nipple up to left shoulder in front. After a few minutes’ rest it would go, and perhaps not return for several hours, even though he continued to bustle about his work. Whenever relief came to pain, much wind escaped from stomach. These attacks of pain gradually became more and more frequent, but less and less sharp, till they changed into the constant aching described above, with occasional cutting pain and wind. Urine usually dark and depositing red sand, but not purpurates. Bowels confined. His occupation for seventeen years has been carrying yokes with milk.

Never had rheumatic fever or serious illness. Parents died healthy of old age. No family complaint.

Physical Signs.—Cardiac dulness normal. No bruit. Action sluggish, sounds rather blunt in character. After making him jump up and down several times pain in chest increased, heart's action became throbbing, sounds became sharp, clear, and quick. No abnormal respiratory sounds.

Ordered rest; powder of soda, ginger, and calumba, with aloes and rhubarb pills.

End of first week, pain has moved from front of chest to left of left nipple. Sweats much (rheumatic sweats).

Continue powders and add pills of iron, quinine and aloes, and effervescing citrate of potass and soda.

Fourth week. Pain nearly gone, only feels it occasionally. Sweats less. Has a bad pain in right loin. Continue medicines.

Sixth week. No pain anywhere, only feels weak and sinking at chest.

Bismuth, iron and quinine to be taken in place of former medicines.

Discharged well at twelfth week.

Case XLIII.—John T., 28. Ill five months.

Pain in the pit of stomach and under right scapula, causing numbness of the *right* arm and leg, produced by eating, coming on directly after. Does not always have the numbness with the pain; sometimes has numbness without the pain. The pain in arm extends down the course of the median nerve. Urine high-coloured and depositing urates.

Blister to epigastrium; effervescing citrate of potass and soda.

End of two weeks, discharged quite well.

Case XLIV.—Louisa K., 23. Ill three months this time, also under Royal Hospital five years ago, with similar symptoms, especially numbness in left side. This has become worse lately. Has pain at chest directly after food. When the

pain after food is very severe the left arm and side become numb, and she cannot keep from going to sleep. Loud venous bruit in jugulars; ditto on pressure in carotids; none in heart. Diet for acid dyspepsia.

Powder of potass, soda and calumba, eight weeks; effervescing citrate of potass and soda, four weeks.

So long as she takes the medicine is quite well, but not without it.

Case XLV.—Charles B., 52, painter. Ill six months. Nov. 26, 1864.

Dreadful pain, not acute or dragging, but like direct pressure from heavy weight at chest, from epigastrium to above the left breast, not under nipple. Not increased by food, but brought on by exercise or excitement. If quiet, pain goes. Beer lies heavy at chest, meat the same, cheese not so bad as these. The pain came on gradually about six months ago. Never feels giddy, but often faint. No lead-line on gums, but they look very red at edges. Perspires profusely, smells sour. A tall, stout, fat, flabby, florid, man. Urine was dark, and deposited red sand, but now is clear. Appetite was bad, but now is good; bowels regular; never sleeps soundly; breath not short except after exertion; pulse 95, irregular in force, soft, and rather small.

Never suffered from gout; no hereditary disease. Had continued fever six years ago; no other severe illness.

Physical Signs.—Heart's transverse dulness level of fourth ribs, $3\frac{1}{4}$ inches, not easily defined. No abnormal dulness upwards. Sounds very faint and confused; cantering action, with long second pause. Impulse very feeble. No bruit. Pulse at wrist is so long after systole that it is nearly synchronous with second sound.

Iodide of potassium, gr. v. every night; powder of soda, ginger and calumba.

Second week.—Pain much better, more shooting. Urine highly acid, but clear. Continue medicine.

Third week.—Pains now only flying. Continue med. Dover's powder, gr. x. to-night.

Fourth week.—Discharged well. Says he could bring on the old pain by walking five miles an hour, but can walk four miles an hour with pleasure. Carrying a heavy weight will still bring on pain, so will running, but so long as he avoids these he has only a slight pressure, not more than an uneasiness, at the epigastrium. Not worse after eating meat, or cheese, or drinking beer. Urine clear and pale. Pulse moderately full, but no resistance. Sleep very light; but he looks ruddy and well. Heart stumbles about once in six to twelve beats; sounds blunt and obscure, no bruit. Discharged well at fifth week.

Case XLVI.—Henry F., 39, furrier. Ill a fortnight this time.

Vomiting and purging of black blood after suffering for about a week from pain and fulness below the left nipple and through to the angle of left scapula. Very large quantities of blood have passed, with relief to pain. Has not had any unusual exertion.

Four years ago had an exactly similar attack, and remained pretty well till a fortnight ago. Had rheumatic fever twenty-three years ago, and again seventeen years ago; but except slight palpitation, to which he has been subject ever since first rheumatic fever, had no illness or inconvenience till four years ago. The attack then, as now, came on with no apparent cause. Temperate, regular habits.

Physical Signs.—Loud diastolic bruit heard most intensely at the base and apex especially intense at base, less so between base and apex than at these points.

Ordered rest. Ext. ergot liq. ℥x. Magn. sulph. ʒi. acid. sulph. dil. ℥x. Acid. gallie gr. x. Water ʒi. every 4 hours. After one week no bleeding; it stopped soon after last visit. Continue medicine another week.

We have here recurring congestion of gastric vessels through aortic regurgitation, a vestige of rheumatic fever. Hæmorrhage preceded by pain and fulness under left breast

and through to the back below left scapula; all symptoms relieved by hæmorrhage. A case pointedly showing the need for close investigation of complaints of pain at the heart to discriminate between the different causes to which this symptom may be due. Had not the hæmorrhage occurred, relief might have been long delayed if the pain had been treated as acid dyspepsia, or simply as a neuralgia due to heart disease. Whereas timely rest and free purging might have given relief and saved the hæmorrhage.

Case XLVII.—Matilda B., 36, single. Ill six weeks. Feb. 9, 1867.

Indigestion from childhood. About two hours after each meal feels pain either in lower part of thorax, in epigastric region, or in right iliac, or in right sub-clavicular regions, which pain continues until a quantity of clear fluid is ejected (pyrosis). Occasionally food is vomited directly taken. *When pain is very severe loses use of right arm.* The pain is acute and throbbing (see p. 14). usually commences in thorax, descends to epigastrium, and finally to right iliac region. Bowels constipated. Pork, veal, pastry, malt liquors, coffee, tea, and wine produce severe pain; cheese, spirits, eggs and vegetables are easily digested. No diathetic or hereditary history. Physical signs all normal.

Ordered—Sub-nitrate of bismuth between meals, three times a day, and compound rhubarb and blue pill.

Feb. 13. Repeat pill, and take effervescing citrate of potass and soda.

March 9. Discharged well.

This is a marked instance of the erratic way in which a thoracic and abdominal neuralgia may be excited by a local cause occurring in the neighbourhood of one of the great nervous plexuses; and also of the fact that the extension of thoracic pain to the arm is not pathognomonic of heart disease. (See Aphorism 1.)

Case XLVIII.—James W., 38. During the last six months has suffered great pain in the cardiac region, if he walks even across the road. Says he almost died yesterday with sudden loss of breath, after stooping down for a moment. He is quite well if quite still or lying down. When the bowels act he feels faint and the pain in the cardiac region, as when walking. Had none of these attacks and no pain till the last six months, but for six or seven months before that he had giddiness on slight movements, and easily fainted; but since the pain at the heart has occurred he has not felt the giddiness and faintness, except at stool. Has a slight cough lately. Pulse very deficient in power, and easily disturbed in regularity. Urine very acid; no albumen. Hair of head and body grey; says he was grey when a boy. Formerly drank hard, but not now. Takes a full allowance of beer; smokes much. Takes very little out-of-doors exercise habitually.

Heart sounds faint and flapping. Transverse dulness just below level of nipple, $5\frac{1}{2}$ inches. No other morbid signs.

Diagnosis.—Hypertrophy and fatty degeneration of heart.

Ordered,—No cheese; no malt liquors; take whiskey and water.

Soda, ginger and calumba before food. Iron, quinine and aloes after meals.

Began treatment Dec. 19th, and by Jan. 15th had lost the pain and was able to take exercise without it, but his respiratory distress was rather worse than better. Alkalies discontinued. Spirit of ether added to tonic.

Feb. 7. He considered himself well enough to be discharged.

THE INTERDEPENDENCE OF AFFECTIONS OF THE HEART, BRAIN, LUNGS AND STOMACH.

The following Cases (XLIX. to LV., see also Case XXVIII.), among many other points of interest, illustrate—

1. The intimate and important interdependenec of Diseases of the Heart and Disases of the Brain.
2. The satisfactory effects of medieal treatment, even in cases of severe and *incurable* Diseases of the Heart and Lungs. (See also Cases of “Pain at the Heart, etc.”)
3. The beneficial influcnce of Artifieial Respiration in some states of Chest Disease.
4. The importance of Lung complications as causes of death in Heart Disease.
5. The importance and dangers of affections of the Digestive Organs in Heart Disease. (See also Cases of “Pain at the Heart, etc.”)
6. The way in which affections of the Lungs and affections of the Stomach become the first demonstrators of the fact that the condition of the heart is abnormal. (See also Cases of “Pain at the Heart, etc.”)
7. The possibility of the occurrence of Angina Pectoris at one period in the history of a ease, without being necessarily followed by a series of subsequent attacks.
8. The great need and importance of a proper bed for severe eases of Heart Disease. (See Plate III. and p. 15.)

Case XLIX.—Thos. S., 61, master tailor.

July 19, 1866, his family doctor wrote as follows:—“The bearer, Mr. S., has suffered for several winters past from bronchitis, the attacks being tedious and difficult to over-

come. He has recently, moreover, complained of a pain in the epigastric region, as well as in the chest, which at first I was inclined to think was gastrodynia, and for which I treated him with only partial benefit. Latterly I have applied two or three small blisters, and dressed them with morphia. This somewhat relieved him; but the pain continues, and is very much aggravated by walking or any active exertion. I shall be glad if you could do anything for him."

I made the following note:—"He caught bronchitis seven years ago by getting into a cold hip bath, while suffering from a bad cold. Has had cough both summer and winter more or less severely ever since. For five or six years has had slight angina pains when excited, but on a foggy night, last January, on getting out of an omnibus to walk a short distance home, he was seized with a very severe attack of angina pectoris, which lasted some three-quarters of an hour, spontaneously passing off, as he rested."

Bowels habitually costive. Urine normal, no œdema, no rheumatism. No hereditary disease, except paralysis in mother. Pulse 80, jerking. Temporal artery tortuous and hard; arcus senilis well marked; tip of tongue red. Heart's impulse, strong; action laboured; sounds heard strongly up aorta and carotid; pulsation of carotid strong and hard. No cardiac or arterial bruit, except on pressure on carotid; cardiac dulness not perceptibly extended, but the line of resonance between liver and right auricle is very slight (Daldy). No obstruction of bronchial tubes, but some crepitation right back. I gave Dr. W. this diagnosis: Hypertrophy, with degenerated vessels; heart beginning to degenerate and fail in power to resist arterial obstruction. Ordered—abstinence from all causes of heart-pain; soda, calumba, ginger and sacchar. carbonate of iron; general hygiene, for increasing muscular tone; and freedom from anxiety.

Christmas, 1867. Heard from Dr. W. that Mr. S. kept pretty well by following rules, very seldom having any pain, but still subject to it if he hurried or agitated himself.

This case is instructive as showing—(1.) the effect of progressive degeneration and hardening of arteries in exciting the heart to excessive action; and (2.) that, if the nutrition of the muscular system is good, *pari passu* hypertrophy is produced, by which for a time the obstruction is fairly overcome. Also as showing (3.) the tendency in such cases to degeneration of the heart and loss of power through failure in the system to keep up the required abnormal amount of nutrition in the muscles. But what it most pointedly illustrates is the way in which any unusual obstruction of the pulmonary functions brings out the symptoms of the defective heart, which heretofore may have been scarcely noticed. The first severe attack of angina was excited at once by an attempt to walk during the obstruction to the action of the lungs caused by a dense fog.

The great amount of good that may be done by rational treatment, and even when serious organic disease exists, is also well shown. We find this man,—who in July, 1866, was a martyr to his painful symptoms,—at Christmas, 1867, fairly able to enjoy life, by adhering to a few simple rules and medicines: and experience has shown me that, barring accidents, if such rules are persevered in year by year, the nutrition of the heart improves, the lungs get better able to do their work, and thus, what was at first only a temporary relief, becomes to a certain extent a cure. (See Case LI. for effects of neglect of such rational treatment.)

Case L.—William C., 50, draper. April 2nd, 1863. Short, stout, large featured; says he has always had fine health, but has had rheumatism in the joints many years until the last five years. Has been getting short breathed about five years, and has had cough in winter during that time. “Thick weather is the worst for him. On a nice, clear, frosty day breath is comfortable.” He now complains of pains like rheumatism in the chest and abdomen.

Physical Signs—Loud, soft *diastolic* bruit heard at base and to right of sternum, the greatest intensity being in the middle of sternum. Heard also faintly to left and at apex. Cardiac region dull one inch to left of nipple, three inches and a half to right of it, three inches above it in a line to midsternum, and three inches below it; the impulse visible over region of dulness.

No further history of disease. Is quite sure he never had rheumatic fever; nose rather inclined to bleed.

The symptoms for which he applies, saying that in all else he is perfectly well are—Spasmodic pains, like rheumatism flying across the chest and between the blade bones; aching below the left ribs, *and giddiness after food*; hands subject to desquamation of cuticle. Urine acid, excess of urates. No albumen.

April 28. Heart again carefully examined. Diastolic bruit confirmed. Has still aching pain under left ribs, and running up to nipple after food, and also flying pains across the chest and shoulders, as before. Has slight vertigo after meals, not brought on by stooping.

The cardiac dulness is exactly according to the measurement given in relation to nipple. Pulse feeble. Ordered alkalies and anti-acid diet.

May 7. There is still a little pain after food under left ribs. No other pains left. A little vertigo also after food. Cough much better, much improved in general feelings. Urine still over-acid.

June 2. Says he is "quite well," no symptoms remain. Has continued alkalies and diet. The physical signs are just as before.

1865. Hear that he died not long since, under Dr. C. and Dr. H., his former family attendants.

On application for particulars from Dr. C., found that he had forgotten the case. But March 11, 1868, I obtained the following through the kindness of Dr. H.:—

“Dear Sir,—I remember Mr. C.’s case very well. I was called to his house at Hornsey in October, 1865. Many thanks for your sketch of his case. Your diagnosis was evidently correct. All the symptoms were of course much intensified when he came under my care. He suffered on two occasions before I saw him from most severe paroxysms of difficulty of breathing, which he thought asthmatic. I found an enormously enlarged heart. A *very loud bruit*, of shrill character at the semilunar valves, to be traced along the arch of the aorta, the arteria innominata to its division into carotid and subclavian, and to right carotid. I have never seen greater symptoms of extensive arterial disease. The impulse of the heart *excessive* and laborious. At first he seemed to improve under treatment and regimen, but in the following February he caught a severe cold, which again brought on the intense difficulty of breathing and considerable congestion in the lower lobe of left lung with excessive debility, and he died in forty-eight hours from seizure. I considered the case one of ossification of the aorta (the arch), and probably progressive in all the arteries of the body; those at the wrist were hard and inelastic. I could not obtain a post-mortem, at which I was most disappointed. It was altogether a most interesting case.”

The special interest in this case is, that the existence of unquestionable organic disease of the heart, which afterwards proved the cause of fatality in an attack of congestion from cold, was accompanied, at least for a long period of time, by symptoms which might easily and rationally have been attributed to rheumatism and to dyspepsia, both of which undoubtedly were present.

Deprived of the physical signs of heart disease, what have we here to distinguish the case from numerous others in which the patients apparently got well, or only partially recovered, but in whom no morbid signs of organic disease

could be detected? (See Cases of "Pain at the Heart, etc.")

We have here a patient who had suffered for years from articular rheumatism, then developing winter cough, as so many of rheumatic diathesis do; the signs of articular rheumatism getting better; but being replaced by flying pains like rheumatism across the chest, back and front, and aching pain in the region of the left end of the stomach, with vertigo after food, as in so many cases of dyspepsia. The rheumatic diathesis was marked at the time by general symptoms, and by desquamation of the cuticle of the hands. Treatment for acid dyspepsia removed all symptoms, and the patient considered himself well, but the physical signs told that he was not.

My opinion is that, however obscure such a case may be, the combination of tendency to nose-bleeding, vertigo after food, the pain after food taking the direction towards the nipple, instead of spreading to the epigastrium, when combined with the other circumstances of the case, should be considered to throw a serious suspicion upon the heart and great vessels. In this case I was led to such a suspicion at once, and detected the heart-disease by physical signs; and had these signs been absent, I do not think it would have been justifiable to have disposed of this suspicion, notwithstanding the apparent recovery under treatment.

I had not the opportunity of watching the case afterwards, but I gave a strong warning to the friends, and the result shows that, independent of the physical signs, the serious nature of the case would soon have become apparent to any one watching its progress. It illustrates, among other points, the important effect of pulmonary affections upon heart complaints, and the fatal character given by each to the other.

The absence of aggravation to symptoms by exercise, was

doubtless a deceptive point, and I am disposed to think that it was explained by the fact that the patient almost invariably used a carriage for exercise, and thus had not his attention called to the distress which he most likely would have felt from walking or running.

Case LI.—J. W. W., 53, commercial man living in the West of England. Aug. 2, 1867. Four years ago first began to feel oppression and tightness at chest on hurrying or ascending. This went on getting slowly worse till October last, when he was seized with “a sort of croupy rattling in the chest, which lasted about three hours, the rattles being very loud.” Had several repetitions of this, sometimes in the middle of the night. The “croupy” attacks were best relieved by emetics. Has of late been more careful in his diet; the attacks have been less severe and less frequent. Urine normal; no œdema.

No rheumatic or gouty history; no hereditary disease. Says he has eaten and drunk everything good that came in his way all his life, his health and constitution always seeming so good that he thought nothing could hurt them.

Physical Signs.—Liver small and hard. Heart dulness slightly extended to right at apex. Loud low-pitched systolic bruit at both apices and both bases, and in both carotids, also heard between the blade bones. Second sound very defective at apex. Slight diastolic bruit at base, as loud at left as at right.

Gave a serious caution as to habits, and the necessity of care to preserve his life.

April 8, 1868. As he was intimately connected with an old friend of mine, and having heard that he was very dissatisfied with the serious opinion I had given of his case, and had seen another doctor, who “said he had no serious disease, and did not need the care I had prescribed,” I wrote to him to ask him to call and let me examine him again, and enclosed an abstract of my note of the physical signs, for him

to show to any doctor he might consult. He wrote to me from Swansea—"I reaped great benefit last summer from a stay of some weeks in Cornwall, and when the genial weather again comes I trust to be equally fortunate;" and indicated that he was so well as not to need medical advice. I could not learn the name of the doctor who had so ignorantly set aside my opinion.

In the following May I heard of his death, and that Dr. P. had been called in. I therefore wrote to Dr. P., to ask for an account of his death, enclosing a copy of my note of August, 1867, for his use.

Dr. P. wrote—"The late Mr. W. was first seen by me early one morning, about 5 or 6 a.m. I understood that he had not felt well for a day or two, though able to get about, and that just previous to my seeing him he had got rapidly worse. He attributed the attack to a cold caught from a draught in church. I found him sitting up in bed, cold, pulseless; lips, face and extremities blue, and breathing with the greatest difficulty. He remarked that he had had similar, but less severe, attacks before. The heart was beating violently and rapidly. The lungs were gorged with fluid. I diagnosed congestive pneumonia, with feeble right heart and valvular obstruction. The old, old story—obstruction in front, want of power behind. He improved for a time, under the use of stimulants, digitalis, and counter-irritation, but sank at last, apparently from exhaustion, and probably, deficient nervous supply to the heart. There was no after-death examination. I understood that he had been seen by two or three medical men in town, who had differed somewhat respecting his case. I was shown no notes of yours or written advice, nor indeed anything which could throw light on the case. But the case was sufficiently clear, unfortunately, of itself. I have no doubt of the soundness of the advice you gave, as to the need of care on his part, and based on a careful stethoscopic examination of the

heart. Indeed, I do not see how it would be possible to overlook the condition of the right heart. Still, I think his heart would have allowed him to live for some time but for the accidental occurrence of congestive pneumonia."

This case affords another illustration of the ominous importance of affections of the lungs in Heart Disease. (See Cases XLIX., L.)

It affords in its symptoms a somewhat remarkable contrast to Case L., in which exercise had not been attended with sufficient inconvenience to attract the attention of the patient. The croupy attacks were doubtless due to retrograde congestion and effusion into the air-passages, probably complicated by some laryngeal spasm. The patient had evidently done his best to produce his disease by careless living, and—having, unfortunately, been put off the guard I had given him by the contradictory opinion he had afterwards received—he continued his careless ways, soon to pay the penalty. He admitted to me that his croupy attacks were often brought on by over-eating, and no doubt he was right; for the extensive disease of the heart, and the dilatation of its right side, rendered it unable to bear being encumbered by the pressure of an overfilled stomach on the diaphragm; and it must always be borne in mind in such cases that a large meal, if digested, is followed by a correspondingly large quantity of blood material poured into the right side of the heart. This throws an undue burden upon the pulmonary circulation, and overcomes the feeble heart; whereas it might have coped with an equal amount of nutrient plasma distributed over a longer space of time.

Case LII.—September 17, 1861.—T. L. S., 57, literary man, sedentary. Very abstemious and reclusive. Very white for age, strongly marked areolæ, exceedingly pallid. Tympanum of right ear perforated; left ear nearly deaf;

anæmie, prematurely old. Heart's action very feeble, very quick and irregular, sounds sharp, anæmie bruit in jugulars. Emphysematous chest-resonance. Expiratory murmur very long and sibilant, extensive, small, capillary crepitation with inspiration throughout both lungs. Has been very short-breathed for many years, and has looked pallid, as at present. Worse this year altogether, which he attributes to having missed his usual summer holiday, during which it appears he has been accustomed to *bathe in the sea*, and to walk much, from which he always has found remarkable benefit.

October 1. Crepitation almost gone. Heart less agitated. Diagnosis of fatty degeneration confirmed.

Nov. 11. Has had no medicine for fourteen days, thinking himself well. Pulse carefully counted again and again, varies from 140 to 159—very feeble; the rhythm changes so frequently it is most difficult to count. He says he has counted it himself numbers of times, and found it, as now, from 140 to 159. Respiration, 32. With iron, quinine, strychnia, and digitalis, he got, as he considered, quite well.

I saw no more of him till January, 1862, when he had a large and sluggish carbuncle on the breast, and a most severe attack of capillary bronchitis, with extensive anasarea, œdema of both lungs, attended with excessive debility and such oppression of breathing, that turning in bed put him in a state of appalling breathlessness. Pulse absolutely uncountable. Albumen in urine during the attack, but disappearing as anasarea passed off. With the greatest difficulty and care I got him over it, to my own as well as his friends' great surprise, and still more so to his own. I never saw a case look more unpromising than this did for days.

As soon as possible, I sent him to Bath, where he had friends, and then to Torquay, with orders to continue his iron, quinine, and strychnia. July 31, 1862, he wrote me from Torquay:—"I spent four weeks at Bath with my brother; then four weeks at Weston-super-Mare, and I have passed nearly

seven weeks in Torquay. The pleasure of my visit to Bath was interfered with by another earbunele, the consequence, as I thought, of good living and faulty assimilation. I endeavoured to treat it on the plan adopted by you with its two predecessors, at the same time reducing my diet, and in about five weeks it disappeared. My general health continued to improve till about a month ago, when I caught a severe cold. For this I took some of the aperient pills, and had an extra blanket on my bed, as a diaphoretic, which I assisted by a nightly basin of gruel. The effects of the cold have now left me, and I consider myself as well as I have been at any time since the beginning of last September, about the middle of which month I first called upon you.

“Ascending a hill, or even walking briskly on level ground, soon exhausts my breath, and brings on cough, showing that the original disorder of my lungs remains, though much less active than in cold weather. Perhaps the state of the heart may be considered now encouraging, as the *pulse is frequently below 90*, and not faint. This afternoon its rate is 96.

“I have taken several warm baths, but have not yet ventured on a dip in the sea. . . . I still have upwards of two months’ leave on my hands.

“P.S. I think of trying a change of scene ere long, as I am tired of this solitary and monotonous life.”

October 28th, 1862.—He called upon me; 17lb. heavier than before his last illness, much less anæmie, pulse 90, soft, full, but unsteady. Heart’s sounds stronger and firmer. Breathing short, respiration 40, but he is not conscious of distress by this rate. Emphysema very considerable. Rhonchus all over chest. He can take exercise, and has been taking cold sea baths, on his own responsibility, with decided comfort and benefit.

June 4, 1863, next seen. Has a large earbunele in the side of the neck; general health much improved; pulse 96 standing, 90 sitting. He says this is the present average.

Heart sounds sharp, regular; a good deal of sibilant rhonchus in chest. Cough still frequent during exercise. Expectoration a good deal, with difficulty. No albumen or sugar in urine; no œdema.

June 11. Pulse 80, respiration 36. Very little cough now (has rested at home), none if he keeps still.

July 16. Carbuncle well. Chest carefully examined; back arched, super-resonant. Expiratory and inspiratory sounds about equal in length, both harsh, especially so in front. Heart's sounds not sharp but blunt, and clearly heard. No bruit.

April 11, 1865. He has got well through the winter, by staying at home. On taking exercise breath is as bad as ever, but not if quiet. Heart's transverse dulness level of fourth cartilage, $3\frac{1}{2}$ inches. Sounds flapping.

1866. Mr. S. called to tell me that last week he had an *attack of modified "angina pectoris," while sitting writing*. Pain, not very severe, began at the top of the sternum, and extended down both arms, in the course of the arteries. Sense of approaching death. The pulse was 60 at first, then 40; two glasses of wine raised pulse to 45, then gradually to 70, in about three hours. The pain lasted three-quarters of an hour. The next day he was as well as usual.

1868, January. Weather very severe. Sent for me. I found him suffering from severe bronchial catarrh. The least exertion produced extraordinary panting, and brought on violent spasmodic cough; but if perfectly quiet for half-an-hour, tolerably free from any discomforts. Pulse very much disturbed, but when quiet not over 90; intermits one in three beats, and with least exertion becomes uncountable. Under perfect rest, generous living, whiskey, wine, quinine; ammoniaicum and lobelia, and free action on kidneys (which were not acting properly) by nitrate of potass.

He speedily recovered, and in fourteen days regained his former health. No albumen in urine throughout the attack.

Commentary made at this stage of the case, viz., February, 1868:—

This case tells its own tale, and shows in a marked manner the action and re-action of lung and heart affections upon each other. A sedentary man, of very abstemious habits, becomes the subject of general tissue degeneration and emphysema, and the heart participates in the abnormal physiological state.

A carbuncle and an attack of cold in the chest, which in a healthy man might have caused but a slight illness, produce the most extraordinary perturbation in his system, a pulse-respiration-ratio of a peculiar kind, and general dropsy of tissues and organs. We see all these appalling symptoms pass away under rational treatment; and instead of the patient being permanently worse, he is restored to a state of health far better than before his illness, and in 1868 is able to get rapidly and easily through an attack similar in its onset to that which in 1861 appeared to be almost beyond the possibility of recovery.

The case is commented upon now, however, because, in 1866, without apparent cause, he had a sudden attack of *angina pectoris*, the first and only one in his life; and it is most reassuring, for, had he applied for medical advice, for the first time with that attack, the general condition and history of the patient might have induced the physician to give a very unfavourable prognosis, representing the probability of repeated attacks of angina from slight causes, and an inability to sustain the shock of a serious illness. Yet two years afterwards he had had no recurrence of the angina, and was able to pass well through a severe attack of chest disease.

From the very first (September, 1861), a plan for the invigoration of the muscular system, and improvement in the quality of the nutritive plasma, was laid down and persevered with; and I think there is no doubt of the success which attended this plan. Had this man been shut up and coddled, he would have been dead long ago.

November, 1868.—Consulted by Mr. S. at his house. He had been ill at home some days with severe cold. I found him suffering as nearly as possible as in January, 1862, except that anasæra was slight, and no œdema of lungs; universal capillary bronchitis; pulse 160; respiration 40 to 60. Expectoration of smooth, scarcely aerated, purulent mucus, half-a-pint every twenty-four hours. The slightest movement produced such perturbation of breathing, that he ejaculated a faint inspiratory scream, and looked about wildly, as a man about to die of asphyxia; tongue loaded; urine scanty and loaded; nails livid; lips the same. For several days he lost ground in spite of restorative treatment, Carbonic acid poisoning enervating daily.

Artificial respiration was attempted by Silvester's method, with only partial success; but by Bains' method he was restored, and the lividity of the lips and nails disappeared.* Bains' method was kept up at short intervals from December 8 to December 11 and then needed no longer. The tongue cleaned, the urine improved in quantity and appearance, no albumen throughout. A blister formed on one leg, which ran freely and relieved anasæra. Cough was deeper, expectoration less purulent and diminishing, appetite fair, and breath sufficiently improved to allow him to masticate, which before was impossible, so that he now took in addition to the brandy and milk and beef-tea, which he had before, a little meat three times in twenty-four hours. Pulse gaining force, but still ranging from 120 to 140. Respiration when quiet, about 30.

* See "On Winter Cough, Catarrh, Bronchitis, Emphysema, Asthma." By Horace Dobell, M.D., 2nd Edition, Churchill, 1872, p. 192.—"Artificial Respiration as a means of treatment."

December 21, he was going on so well, although very slowly, that I suggested missing my daily visiting on the 22nd for the first time. I was unfortunately, however, summoned to him in the afternoon. His bowels had failed to act the day before, and a pill he had taken had not acted; he felt great oppression and flatulent distension at epigastrium, which caused excruciating difficulty of breathing. Physical examination showed no pleurisy, or other new or increased chest affection, and clearly proved that *the difficulty was in the distended stomach*. An emetic he feared to take, lest with his breathing-difficulty it should choke him, which seemed very probable. Twenty grains of rhubarb were given in an aromatic draught, and a mustard poultice ordered. He was an obstinate man about nursing, and it seems that he insisted, contrary to my orders, on getting up and sitting on a bed chair when he thought the draught ought to act. This distressed his breathing excessively, and he was got back to bed exhausted without the bowels having acted, and he lay down and died without a struggle, "wrecked in port!"

The conclusion of this case shows how important, as a cause of death in heart disease (especially when complicated with pulmonary disease), distension or spasm of stomach may become. It killed the patient when he was getting well. It also illustrates the evil consequences of allowing patients in imminent danger of death from chest disease, to get out of bed for the relief of the bowels. The number of deaths from neglect on this point is very large. It is probable that the use of the heart-bed (See Plate III.) might have turned the scale in favour of this patient, by preventing some of the unnecessary pressure on the diaphragm, and by removing the excuse for getting out of bed for the relief of the bowels.

Case LIII.—John D., 57. Feb. 16, 1863. Complains principally of two chief symptoms:—

1. For three or four years he has been getting short-

breathed on taking exercise, and for two years gradually increasing tendency to a sore pain at the cardiac region, coming very soon after beginning to walk; much sooner if hurried than if quiet, and if ascending than on level ground. This feeling obliges him to stop, with a feeling that it would kill him to go on. Two or three minutes' rest allows him to go on. This is getting worse. The exact region of pain is at two points—one exactly behind the left nipple, the other at the epigastrium, with soreness of the ensiform cartilage. The pain consists of a sense of *increasing weight* on the two points mentioned.

2. Three months ago, on the night of a heavy fog, pain in the chest became so severe, and extended so widely over the chest and abdomen, that he could scarcely breathe. Since this occurred he has become subject to occasional attacks (sometimes four or five in a day) of a sudden loss of breath, obliging him to pant for a few minutes to regain his breath. *This comes on while sitting still*, not while walking.

When the pain in the chest comes on there is always expulsion of wind, not when short breath comes on. Last year he suffered much from neuralgia in the jaws, beginning in the teeth.

A short (5 ft. 3 in.), square-built man; weight, 12 st. 7 lbs. Complexion light, sandy; lips pale; conjunctivæ pale; eyes watery looking, from flaccid conjunctiva; arcus well marked. Bowels regular; motions apt to be pale, and when they are he has a disagreeable taste in the mouth. Appetite good. Urine clear, medium colour; no albumen, no sediment, normally acid.

Pulse 82, feeble, reluctant; occasional intermissions and distinct irregularity in force. Left radial slightly more powerful than right. Liver dullness extends to right nipple, not abnormal below. Heart sounds heard from two inches to right of *right* nipple to the line of axilla on left side level with nipple. The sounds are of nearly equal length, and

follow quickly; the pause after second sound is short. Nothing else peculiar. The heart was percussed carefully on March 2nd, just after walking, and while beating fast with pain under left nipple. The transverse dulness level of nipple was 4 inches.

Father died, 64, of apoplexy; not gouty or rheumatic. Mother was healthy, and died in childbirth. One sister, healthy. No disease known in his family as hereditary.

From 1826 to 1858 he was much confined to a house and shop. He gave this up on account of languor and weakness, attributed to too close application. Since 1858 has been out of doors much more, and health has improved, but the symptoms above described have gradually encreased. Habits temperate.

Ordered strychnia, quinine, iron; diet excluding sugar and malt liquor; cold friction bath; never to continue walking when pain threatens, and to take meals regularly.

June 16 (four months' treatment). Pain has shifted; it is now three inches to left of nipple, and the epigastric pain has gone to the centre of sternum, on level with nipple. No soreness of ensiform now. The pain only comes on walking, and comes less quickly. If walking *fast* it comes on after about a quarter of a mile, then leaves with a few minutes' rest. Does not come after eating unless he is *hurried* in eating, then it will come. There is no pain between the points named. The pain has still the character of an increasing weight on the two points. The heart-dulness does not reach to the point of pain (three inches to left of nipple). The heart-sounds are improved in tone, still very widely heard. He has been in the country, and was able to walk seven miles with tolerable ease, the pain coming occasionally, but leaving after a few minutes' rest.

July 13. Has continued the same treatment. Can walk half a mile without pain, and then if he stops a minute he can go on again another half mile. He feels stronger and better; "as well as he can expect," he says. Pulse remains

as at former note (Feb. 16). There is more red colour in integuments and mucous membrane, and he has lost weight. Heart's sounds firmer; still very widely heard. He "feels sufficiently well, thanks." He thinks himself cured, but I have ordered the strychnia and iron to be taken alternately till he can walk without pain, and to come to me in six months.

Nov. 5, 1863. Has lost about 10 lbs. since last July. Can walk fast half a mile without inconvenience, a mile gently, and then a slight stop sets him right again. Has had no severe symptoms since last note, till six days ago, about eleven in the morning, when he came over giddy while sitting still; the colours of the rainbow surrounded all objects to his vision, and of horizontal objects could only see the left half—in the word horizontal for example, could only see "horiz." This lasted half-an-hour, and was accompanied by pain across the forehead. These attacks have often come back since. He does not feel sick at time of attack, but much wind passes. The bowels were open, and he had eaten his ordinary breakfast and done nothing unusual at time of first attack. The attack returns once or twice a day, but less severely than at first. The day after first attack had numbness, and pins and needles in the lips and tip of the tongue; nowhere else. It did not affect speech; it soon went off. This sensation has returned slightly once. The heart felt comfortable throughout these symptoms.

Urine clear, nearly neutral; no albumen. Pulse 83; fuller than formerly, still irregular in force, and intermitting about once in two minutes. Conjunctivæ and skin less anæmic. Tongue clean. Memory muddled the last few days. Heart-sounds blunt; sounds and pauses of very nearly equal lengths, giving just the rhythm of the puffing and rumble of a locomotive engine when slackening speed, a sort of distant reverberation being heard after the sounds. Has taken strychnia $\frac{1}{48}$ gr. night and morning; quina and iron pill alternately, one month each for two months.

On November 8, 1863, as I was hurrying to a train, I was stopped by a messenger, who said Mr. D. had had a fit, and was dying, Mr. C., his family doctor, being in attendance and desiring my consultation directly. I had only just time for a very short visit. He was not quite insensible. He lay pallid, and paralysed on the right side, his speech gone. His wife found him thus when she woke in the morning, and no more could be learnt. I left him in Mr. C.'s hands, who wrote me as follows:—"I saw Mr. D. again about six o'clock on November 8, he was then quite insensible, with short breathing, and the mouth drawn to the side. He was lying rather turned on the right side, so that I could not ascertain if there was any paralysis on that side without lifting him; but from the manner in which he lay until death, there can, I think, be no doubt on the subject. I saw him again about eleven p.m., when the symptoms had increased, the mouth being still more drawn, the breathing still the same, but with blowing expiration. He lived till seven in the morning." No post-mortem was allowed.

This is a well marked case of fatty degeneration, with hypertrophy of the heart. The heart was like the rest of this man's frame interstitially fattened. He was 5 ft. 3 in. high, and weighed 12 st. 7 lbs., whereas the model weight for that height is 9 st. 4 lb. His blood was deficient in red corpuscles, therefore oxidation did not go on with sufficient activity to consume his surplus carbon and hydrogen. His liver occupied an abnormally large space; the heart-dulness was four inches in transverse measurement, where it ought to have been under three inches. The slightest tax put upon the heart produced sensations warning him that to call upon it for increased exertion would be to break it. Even when at rest it could hardly perform its functions, and was so incompetent that intermissions frequently occurred; and that

it failed, again and again, to maintain a normal cerebral circulation was indicated by the symptoms noted November 5.

The very decided improvement which took place under treatment showed how much might have been done towards a permanent cure, had the ease been seen at an earlier stage,—before the degeneration of tissues had become permanent, before the blood-making organs had lost the power to construct blood capable of regenerating deteriorated tissues, before the normal tissue-germs had been displaced. The mode of his death indicated that the cerebral vessels had participated in the general decay, and, as a machine is no stronger than its weakest part, so, at the very time when the heart appeared to be somewhat regaining vigor, the vessels of his brain gave way, and all was lost. I say the vessels “gave way,” for his death appeared to be due rather to rupture of a vessel than to embolism.

I must not forget to call attention to the respiratory distress coming on without exercise, as a most marked symptom of extreme cardiac degeneration, and also to the extraordinary aggravation of symptoms and extension of the region of pain occasioned by his exposure to a heavy fog, that is to a cause of *oppressed lung action*, and hence to an obstruction to cardiac action. The effect of the fog in this instance is only what we see so often coming as a cause of death in heart cases, when they unluckily get influenza, bronchitis or pneumonia. (See Case XVIII., Case XX.)

The expulsion of wind attending the attacks of pain, the occurrence of neuralgia in the maxillary branches of the fifth nerve, and many other points, deserve notice.

Case LIV.—F. M., 50, manufacturer. November 14, 1867.—A heavy, large man, tall, stout, and square, but with anæmie, clayey, aspect; nervous, breathless manner;

easily turning pale when excited. I have attended members of his family for about ten years, and have occasionally seen him, formerly looking more vigorous, but always about the same size, and when out of doors walking rather fast. Says he has never walked less than six miles a day. Consults me for "dull, heavy, pain in the heart." It never spreads, but this pain makes it difficult to sleep on left side. To-day, for the first time, had a shooting pain through the left shoulder. Coming on about two years.

Has generally drunk about half a bottle of good wine and two glasses of grog per day for years; no beer. Has suffered occasionally from acid dyspepsia, never lost blood, never had any inconvenience at heart till the last two years; but says that twenty-five years ago Dr. Golding Bird told him he had no blood, and a very bad pulse. He has been losing sexual inclination since heart has been getting troublesome, and says that sexual excitement produces such alarming palpitation and heart distress that it frightens him. Pulse very feeble, very irregular in force and rate; impulse irregular in force; sounds sharp, widely heard, no bruit. Sphygmogram shows extraordinary want of heart power and disturbance of rhythm; transverse dulness $4\frac{1}{8}$ inches at fourth cartilage; turned faint while being examined standing. Has had varicose veins for years. Says he has had severe palpitation on very slight nervous excitement, or walking, for about twelve months, and during the last two years smoking has produced palpitation, never before. Has been taking alkalies and iron and stomachics, and is better in health than before that. To continue powders of ginger, soda and calumba with saccharated carbonate of iron, and to take strychnia, ergot and quinine; hygienic management to promote increased nutrition of muscles, avoidance of excitement.

November 19. Pulse regular to-day; heart also more regular, but has more pain under left breast and running round the ribs, and the shooting pain in left shoulder is troublesome.

February 16, 1868. — Has gone on much as before, taking his medicines occasionally, on the whole thinking himself better. But this morning his friends thought he was going to die suddenly, he turned so faint when he first got out of bed. He was restored with difficulty. It appears that lately he has nearly fainted every morning on first getting up, so that he has been obliged to sit on the edge of the bed and take *sal volatile*; and the last day or two has been spitting mucus tinged with blood, the first time in his life. No pain or oppression above region of heart; *no pain or uneasiness in throat*. He came to me about seven miles in his brougham. Pulse very feeble, irregular, and quick. Heart going “anyhows.” I was obliged to give him brandy. A very slight trace of albumen in urine for first time. I placed him under the watching of a local doctor.

February 20.—I was telegraphed to see him, in consequence of severe symptoms of bronchitis and pulmonary congestion, with extreme prostration. On the following day Dr. H. reported as follows:—“Feb. 21. Mr. M’s condition appears almost the same as yesterday, crepitation still continues, but not vesicular. The blister and dry cupping appeared to have afforded marked relief last night, but to-day (12 o’clock) he seems as bad as ever. Has severe dyspnoea, and frequent partial fainting fits. His water runs from him, but his bladder is quite flaccid. He has not expectorated at all. His teeth and lips are stained with rusty sputa. When the dyspnoea has been urgent I have given him chloric æther, with good effect.”

Feb. 22nd I saw him again. By a delay in the delivery of my return telegram appointing time, my visit took him somewhat by surprise, although he had anxiously waited to see me. When I entered the room he rose in bed, spoke excitedly, and said he was much better, but seemed very nervous, and before he finished his sentence, turned yellow white, and *lost consciousness for about a minute*, the mouth

being drawn to the right, and the left nostril becoming flaccid ; he recovered consciousness rapidly, but speech was difficult ; he talked incoherently for a minute, the breathing being thick and difficult. After a minute or two he talked coherently, quite unconscious of what had happened, blew his nose and laughed, but mouth remained drawn, and nostril flaccid. Pulse at wrist did not stop during the attack, but went on in its usual irregular, intermittent way. Probably, embolism of cerebral vessel.

Feb. 23. Dr. H. wrote—"On my calling on Mr. M., half-an-hour after your departure (5 p.m.), I found him breathing stertorously, eyelids closed, pupils contracted, but able to answer questions. I applied a blister to back of neck, mustard cataplasms to the calves, hot water to the feet. His condition was the same at eleven o'clock at night. This morning I found his condition improved. He greeted me heartily on my entering the room, and expressed himself much pleased at having seen you yesterday. His mouth was still drawn to the right ; he had, however, no difficulty in putting out his tongue, which remained in the mesial line. His speech is still very thick. He does a good deal, and there is still some stertor. As his water still ran from him I passed a catheter, fearing what remained might become offensive. What dribbled away contained small fibrinous clots, some of which also came away on the withdrawal of the catheter. His urine is acid, and does not contain any albumen."

He appeared to go on well, and we avoided any consultation, lest it should excite him, as on the last occasion.

March 11. Dr. H. wrote me—"I am glad to state that Mr. M. is in no immediate danger, although he is in a very weak state. Since I last wrote you he has had another severe congestion of the lungs, particularly on the left side, and it still continues in a slight degree. The *paralysis has entirely disappeared*, and he has had no symptom of another attack. The nervous excitement is very great at times. Last

night I gave him ʒi. of liq. morphinæ hydrochlor, and Miss —— tells me he has had a better night than for some time. He is taking sulphate of quina and iron with valerian. He was so much better as to come down stairs and stay there some hours, and he has had a fire, to sit in his dressing-room; but the exertion of getting up is at present too much for him.”

After this I was sent for again, and found him stagnated at every point, and evidently dying.

Dr. H. kindly sent me the following report:—“After your last visit he sank slowly but steadily; his pulse became almost imperceptible. He took more nourishment than he had done previously; six to eight ounces of port wine, about a pint of strong beef-tea, and a fair quantity of brandy-and-water in the twenty-four hours. I still continued the beef-tea and egg injections twice or three times a day, and the quinine and iron, but there was some difficulty to get him to take it. The pile was a source of annoyance, bleeding frequently, and smelling most offensively. There had been for some time œdema of the feet and ankles, but about a week before his death this increased very much, particularly the right leg, on which he had some varicose veins. His speech became quite inarticulate, from the swelling and retrocession of the tongue. Discoloured patches, some of them quite black, appeared on the trunk and arms. The emanations from the body, and also the evacuations, were very unpleasant, so I used Condyl’s fluid plentifully.

“On the 26th March he passed his motions involuntarily, and his urine accumulated and was drawn off by catheter. He took some port wine in the evening, and I left him apparently comfortable. Early on the 27th I was called and found him dead, though still quite warm. Miss —— thinking him asleep, had left him for a short time, and on her return, finding that he did not take any notice of her, she became alarmed and sent for me.”

No post-mortem allowed.

It is evident from this case that regular exercise in the open air will not prevent degeneration of an hypertrophied heart, unless combined with other means of maintaining healthy assimilation and a sufficiency of red blood. The chronic anæmia of this patient in all probability caused the tissue degradation, which ultimately led to his death.*

Case LV.—Thomas B., 51, millwright. First consulted me at my house August 11, 1868. Has been under Dr. Jeaffreson five weeks, without benefit. Was under me six years ago, when, he says, I told him he had disease of the heart. He got well then. Palpitation is severe, and it is for this that he applies for relief. Never had rheumatic fever, but has always been rheumatic. Lungs congested; pulsation in the veins; at apex of heart a thrill to palpation. Heart's dulness extensive. Long whirring systolic murmur at apex, very faint second sound. Long peculiar first sound at base, very feeble second sound, occasional intermissions. Pulse frequent, large, very soft, no power. (See Dr. Sanderson's Manual on the Sphygmograph, p. 13. "*Magnus, frequens, mollis.*")

August 12. At ten a.m. summoned to see him in haste. Found him sitting up in a chair with partial paralysis of both sensation and motion of right arm, motion more lost than sensation; nearly complete loss of power to articulate. No drawing of face, but the lower lip dropped; mouth running over with saliva, looking just like a person under mercurial salivation (has had no mercury). Could protrude tongue straight, but with hesitation; coated with thick pasty furr. Both hands and arms warm, pulse the same on both sides, legs not affected, breathing not affected. Intellect rather, but not much, confused. His wife says that before consulting me yesterday he had felt a difficulty in holding his stick in his right hand, but

* See "On Diet and Regimen in Sickness and Health," 5th Edition; chapter X. "On Anæmia and Fatty Degeneration." By Horace Dobell, M.D.

he did not mention it to me, nor was any loss of power observable during my examination. After leaving me he had much distress from palpitation, and felt very restless all the afternoon and the early part of the night, so that he sat up in a chair till two o'clock. Then feeling better, he went to bed, was able to lie flat, and dropped to sleep. When his wife woke about eight o'clock she found him sitting up in bed in the state above described. The bowels had acted freely from medicine. He was not sick.

August 13. Rather better in all respects, but says *left arm feels numb now and then*. He has no loss of power in it.

Heart's Sounds.—On an old prescription of Dr. Jeaffreson's "Double mitral murmur" is written in the corner. The apex bruit is present but less marked than before; the first sound at base is accompanied by a bruit. No diastolic bruit detectable.

14th. He sent to say he was so much better that I need not call till next day.

15th. Paralysis gradually diminishing. No diastolic bruit detectable; but second sound very faint as before. He was very anxious to interfere with business, and had been a good deal excited by having a lot of workmen up to his room (contrary to my orders) to settle their wages. I gave very strict orders that he should keep perfectly quiet, and see no one.

16th. Called up at 5 a.m. He went down stairs after I left him yesterday, in spite of opposition from his family, transacted business, and fatigued and excited himself much; felt very restless afterwards, and sat up late in his chair; then went to bed, and shortly after 3 a.m. had a "fit of convulsions." Completely lost power of speech and use of right leg and arm. When I saw him he was partially conscious; there was complete paralysis of right side; no speech; pupils contracted, skin cold and clammy; a deep sigh occasionally passed, when he would rouse a little and try to say something, and then relapse into a sort of

half faint. No power of swallowing, even a teaspoonful. Urine had passed in bed. He died about 7 o'clock a.m. No post-mortem allowed.

His son says he heard his father had some disease of the heart twenty years ago. He was always a very excitable, tyrannical man, who worked tremendously hard, was very penurious, always looking forward to retiring with money. This year he had decided to retire into the country with his wife and daughters. When excited, he used to stand and beat his heart with his fist, "looking as though he would die." After beating the chest for a few minutes, he would recover himself, and seem right.

This case presents several points of practical interest. There can be little doubt (though unfortunately no post-mortem was permitted), that there was old mitral and probably aortic valvular disease; that the habits of the patient had aggravated all the pathological changes—over-taxing the heart at times by ungoverned temper or excited labour, encouraging feebleness rather than strength by penurious living and want of fresh air. That thrombosis (clot in the left heart) had occurred when first seen by me, and assisted in the formation of the physical signs, especially the vibratory thrill over the heart; that a portion of clot was washed off into the circulation and plugged a cerebral artery after he left me, probably assisted by his exercise and excitement in visiting me for the first time; that he was in a fair way to recover from this first embolism, when he disobeyed my injunctions, and excited and fatigued himself, and thus assisted in producing a fresh embolism, and probably rupture of an artery in the left side of the brain.

The case shows the importance of *quiet* after an attack of paralysis from embolism, and the fatal effects of disregarding this precaution. It also shows the ill effects

of defective hygiene and regimen in valvular disease. It is interesting to observe the measure adopted with success by the patient for some twenty years, as recorded by the son, for urging the heart to overcome its difficulties; the rough blows upon the chest, probably acted on the heart somewhat as a galvanic shock might have done; or as the cold douche, or grasping with the hand, are found to do in exciting contractions of a sluggish uterus.

Notwithstanding the serious organic disease, *pain at the heart* was not mentioned by him as one of his symptoms. Palpitation was the prominent symptom for which he sought relief. It is almost certain, however, that when excited and induced to beat his chest, it was from an unbearable sense of congestion at the cardiac region, which in itself constitutes one form of heart pain. (See p. 14.)

Aphorism X.—The appalling import of *pain in the throat* in heart disease increases in proportion as the period of its onset deviates from the following order of events:—

1. Pain under the left breast.
2. Pain extending from under the left breast to mid-sternum.
3. Pain extending from mid-sternum towards the left shoulder.
4. Pain extending from the left shoulder down the left arm.
5. Pain extending from mid-sternum towards the right shoulder.
6. Pain extending from the left shoulder down the right arm.

7. Pain extending up the sternum towards the region of the throat.

8. Pain in the thyroid cartilage.

When this order of advance is maintained as the exciting cause is continued, pain in the throat expresses the degree of dangerous persistency in the exciting cause of heart distress, rather than the degree of danger in the disease itself.

Aphorism XI.—In proportion as the *right* side of the chest and *right* arm take precedence in the order of extension of pain at the heart and in its neighbourhood, the probability increases that the aorta is more diseased than the heart.

Aphorism XII.—The volume of blood and other conditions being normal, the facility with which the pulse at the wrist is stopped by inspiration measures the *loss of heart power*.

POSTSCRIPT.

AFTER the foregoing pages had gone to press, Dr. Quain delivered his lectures "On Diseases of the Muscular Walls of the Heart" at the Royal College of Physicians. Having studied these with care, I find that my own experience is confirmatory of most of his statements; and I gladly take this opportunity of expressing my thanks, as one of those members of the profession specially interested in affections of the heart, for the important service Dr. Quain has rendered in calling attention to the causes of disease of the muscular walls of the heart in the present day.

I am inclined, however, to think, that before deciding that diseases of the heart are really *as much more common* in the present than in former days as they would appear to be from the Mortality Reports of the Registrar-General, a considerable allowance is to be made for the frequency with which deaths used to be registered under the head of Dropsy, Apoplexy or Paralysis, which are now attributed to Heart Disease.

In enumerating the causes of disease of the muscular walls of the heart, Dr. Quain has omitted one which, I regret to say, ought, according to my own experience, to occupy a leading position: I refer to sexual excesses, and especially self-abuse. I have long been convinced, from observations in practice, that steadily increasing disease of the muscular walls of the heart is frequently the result of persistence in excessive sexual indulgence; and if affections

of the heart should become more and more common, I fear we must attribute it, in some measure at least, to the sad fact that sexual excesses, and especially self-abuse, have most alarmingly increased in England since the more facile communications with the Continent of Europe have led to the constant interchange of scholars between French and English schools.

The subject is one of the gravest and most distressing importance from the extreme difficulty of contending with it in such a way as to avoid doing more harm than good.

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